THE URBAN TRANSPORT PLANNING PROCESS IN CHRISTCHURCH - THE MASTER TRANSPORTATION PLAN

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ABSTRACT

This thesis describes and analyses the operation of the urban transport planning process as it applied in the Christchurch Master Transport Plan.

Three specific research areas are studied:

(1) to describe the process of urban transport planning as it operated in Christchurch;

(2) to identify the nature of the relationship between transport and urban development in Christchurch; and

(3) to assess how this relationship, and the urban transport planning process has adapted to change during the course of the Master Transport Plan.

The study showed that the perception of the decision situation in the Christchurch case was largely subjective but played a major role in the decision-making process. A 'rational' master planning methodology was inapplicable, incremental planning decision seemed more important to the plan product.

CHAPTER I

CHAPTER 1

INTRODUCTION

The provision and maintenance of an efficient network of transport routes has long been one of the major concerns of city planners. McConnell (1981) cites the co-ordination of the use of urban spaces and the channels of movement as "...a functional reason for planning."[1] Indeed with the modern urban form being a

> "...concentration of people and activities such that movement and communication among them may be achieved at low overall cost,"[2]

the need for efficient linkages is paramount, and the role of the transport planner crucial.

Modern prescriptive urban planning has indeed recognised this. The concept of the city as an 'urban system', with transport as the link between this system's component parts, has been a common theme in planning literature.[3] The most frequently used analogy in this respect is that of the city as an organic complex.[4] Wheeler (1974) went so far as to describe the city as an 'urban corpus' within which the transport network acts similarly to the human vascular system.[5] Such an analogy serves to highlight the role transport plays within the urban complex.

Study Aims

This thesis attempts to examine the place of transportation planning within the broader tapestry of planned urban development in the Christchurch

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1. McConnell (1981) p.3.
2. Wheeler (1974) p.3.
3. See for example McConnell, op cit, Hutchinson (1974), p.9.
4. Geddes (1968) p.142, Abercrombie et al (1943).
5. Wheeler, op cit p.11.

region. The aims are threefold:

(1) To describe the attempts of a range of public bodies to co-ordinate the process of transport planning within the Christchurch metropolitan area.

(2) To identify the nature of the relationship between the forces of transport and development in the Christchurch case, over time, and

(3) To assess the manner in which both this relationship and the urban transport planning process itself has changed and how these changes have been articulated in Christchurch.

This thesis is concerned primarily with the evolution of a Master Transportation Plan for Christchurch (M.T.P.). In this respect attention is concentrated upon urban transportation planning in the period from the 1950's to the 1970's.

Thesis Structure

Urban transportation planning has been described as

> "The appraisal of conditions within the community (leading to) a choice among alternative actions within government and the alleviation of unsatisfactory conditions through the implementation of a chosen action,"[6]

- it therefore involves decision-making in the selection of a strategic choice. Such a process can be represented diagrammatically as below (Figure 1.1).

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6. Hutchison (1974) p.6.

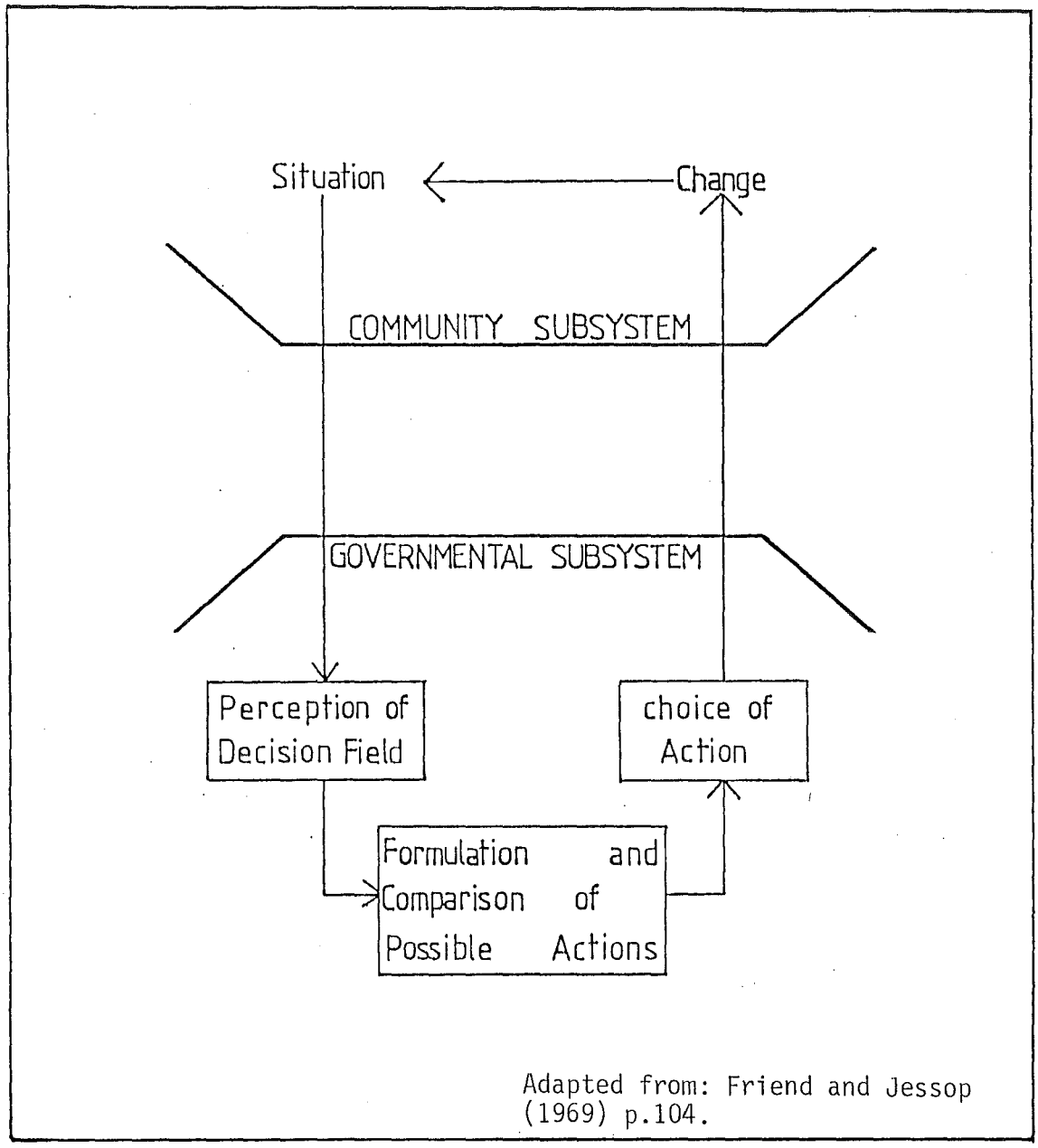

Figure 1.1 Urban Transport Planning Process

This circuit involves interaction between the governmental subsystem, where such strategic choices are generally made, and the community itself, where the 'choice' would be applied. Information and influence are passed between these two subsystems. For example, a persistent state of congestion in a road network calls for a response from concerned governmental bodies. Their decision - whether it be to

act in a certain manner or not act at all to alleviate the problem - has its effects felt back in the community subsystem. The process of selecting the type of response involves therefore the making of decisions, based on available information.

It is to how this process has operated and the results achieved in terms of Christchurch urban transport planning that this thesis is addressed. The remainder of this Chapter provides an introduction to the general aspects of master transportation planning methodologies, after which the study begins to examine how the various elements of the model introduced above were articulated in Christchurch.

The first element - perception of the decision field - involves the development of the initial understanding amongst concerned public bodies of the type of transport problem they were confronted with. Faludi[7] has argued that such perceptions or 'definitions of the decision situation' are subjective, thus influencing the range of choices available. Whether this is the case in Christchurch will be determined by analysing the evolution of the problem and the call for a planning response (Chapter 2).

The type of response selected is a product of the subjective perceptions outlined above. The formulation and comparison of alternative courses of action, the changes in the exogenous planning and political environments and the choice selected as the M.T.P. 'solution' are described in the third chapter.

Since the planning process itself is not 'immediate' - solutions to transport problems are generally not developed and produced instantaneously, but rather evolve over some time - then conditions in the environment in which such a process operates may themselves change. Chapters 4 and 5 examine this period of 'lag' between M.T.P. solution design and construction. Modifications in the plan solution which resulted

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7. Faludi (1980) pp.28-9.

from changes in external conditions, are outlined in Chapter 4. How the M.T.P. was 'adjusted' to incorporate elements such as the rise to prominence of environmental concerns within transport planning (from the early 1960's), the energy crisis and economic downturn (of the 1970's), are all described. The fifth chapter considers the relationship between transport planning and urban development during this lag period. Changing concepts on the spatial organization of the Christchurch urban area, and the role of other planning proposals (e.g. the form and direction of urban growth) are considered in some detail.

Finally, the study returns to the aims set out above, analysing the experience of urban transport planning in Christchurch and whether it conforms to that which the model process suggests. This chapter (6) concludes by arguing that the Christchurch example shows that the dynamic nature of urban transport planning precludes the making of long-term 'master' plans. Instead, it is suggested, the planning process should be geared to more incremental decision-making and that a Master Plan should remain purely indicative.

THE EVOLUTION OF URBAN TRANSPORTATION PLANNING METHODOLOGY

Developments in transport modes have made considerable impacts on the urban sphere in this the twentieth century, none more so than the advent of the automobile. The private car has created a host of possibilities and problems in the urban setting - changes on an unprecedented scale, notably with reference to urban structure, have been initiated.

The greater mobility and flexibility afforded to city-dwellers by the motor-car has freed them from reliance on other modes (notably public transport) whilst, at the same time, increasing their range of locational choices for a variety of activities. The rise of the suburban

lifestyle has been a feature closely associated with the growth of car ownership. No longer has the city to be compact to minimise travel distances. Residential dwellings can now be shifted away from the vicinity of factories and noxious land-uses, with the labour force commuting daily. The city dweller has now moved out toward the urban fringe, to more space and a more pleasant environment.

The spatial freedom the car has provided for the urbanite has, however, served to trap him/her into a reliance on the automotive mode. Suburban expansion and the separation of land-uses which has accompanied the automobile era, has served to increase both the distance to be traversed and the number of trips that need to be made. In this manner the automobile and modern urban form are complementary, self supporting developments. Working together they serve to reduce the ability of other modal options to compete.

Within established areas of the city however, the advent of internal combustion powered transport has necessitated change with respect to the nature of transport links. Road networks existed as the principal paths for urban movements long before the development of motorised transport. As such, in many urban areas these transport links were not designed with auto-dominance in mind. In many urban areas roads have faced growing pressure from the increasingly ubiquitous car. Traffic congestion as an urban malady has evolved as an increasing source of annoyance, disruption and expense.

Increasing automobile generated congestion as a phenomenon was first experienced in some cities in the 1920's, demanding a response from urban planners and technocrats.[8] This response has largely been to assimilate the car into the existing urban scene. From the outset, solutions were sought from engineering designs and construction. In

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8. Creighton (1970) p.128.

America active participation in the provision of urban motorways (or "freeways") had its beginnings in 1928, with the extension of some inter-city highways into the cities.[9] Later, in the 1930's, many of America's urban areas began to be the first to feel the growing demands upon their roading system, and the provision of these limited access, high speed, automobile exclusive traffic facilities became more common-place.[10]

The vast scale involved in the provision of such urban automobile facilities, combined with the capital intensive nature of such projects and considerable construction time, necessitated some form of procedure to identify potential traffic problems well before they actually appeared. The earliest transport planners were however, restricted in the means available to them to predict future demand. Crude forecasting methods, generally involving a straight line projection of past trends in traffic growth along the routes concerned, were the only tools available. Use of such a technique could reveal areas where insufficient road capacity existed and in this manner investment could be directed to meeting the need, prior to its appearance.

Refinements in urban transport planning methodologies were soon to develop (see summary, Figure 1.2). The comprehensive transport studies carried out in the United States during the 1940's and early 1950's expanded the information gathering process by introducing the home interview travel survey. This technique recorded a representative sample of all travel by all modes in a metropolitan area. The major advantage was that the total travel demand placed on the whole urban road network was considered not, as previously, the problem facing one section of roadway within that network. This meant that transportation facilities

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9. Whilst the cities benefited from such extensions, they were not undertaken specifically to relieve congestion rather to connect the inter-city highway network - Smerk (1980), p.123.

10. Ibid, pp.123-5.

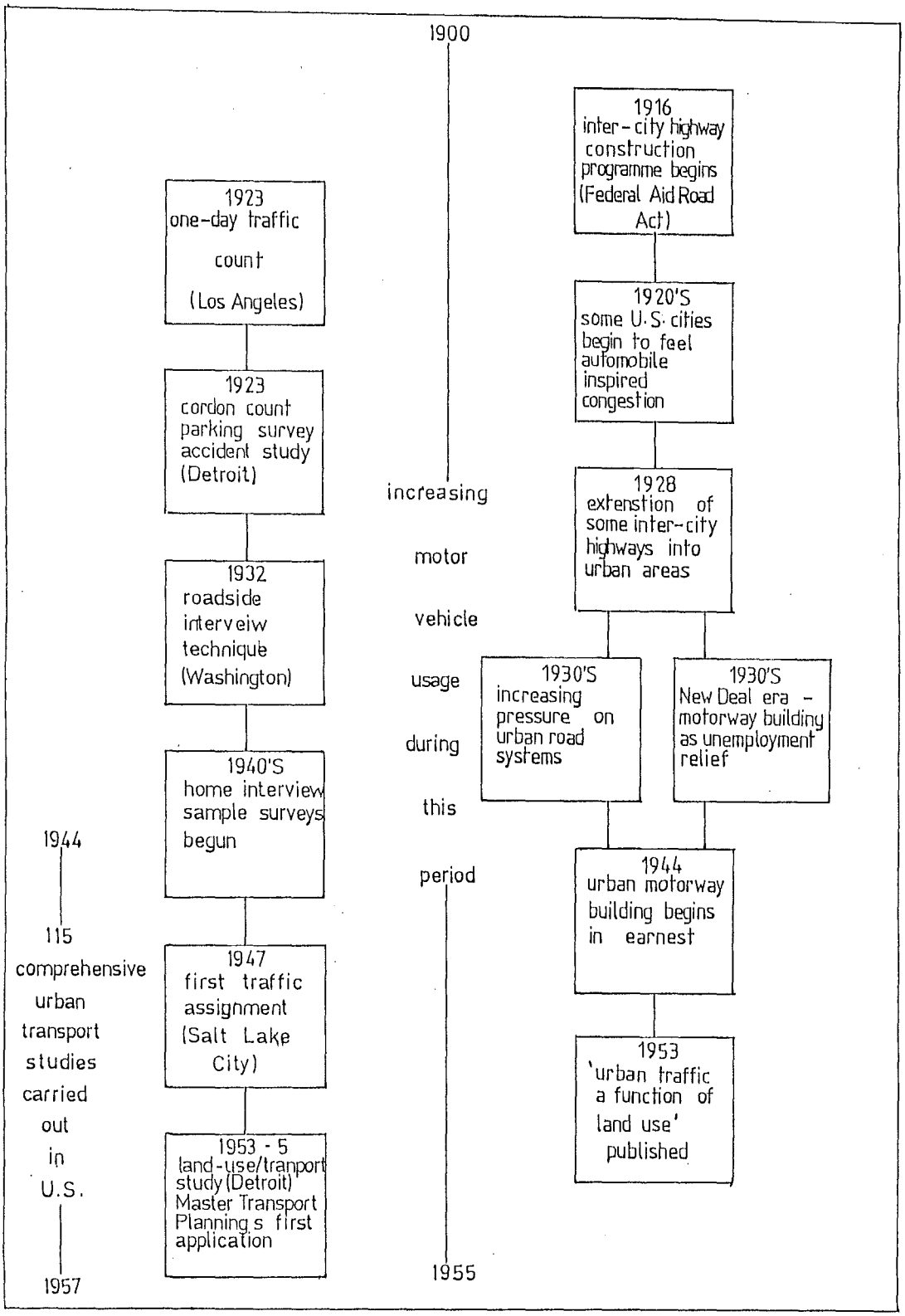

Figure 1.2 Development of Master Transport Planning Methodology (U.S.)

(including motorways) were planned *as systems*, an entire road network, including motorways, was considered as a unit. The first traffic assignment - in which trips were assigned to a planned expressway or network to estimate the traffic volume that would use it - was made in Salt Lake City, Utah, in 1947.[11]

Despite such technical advances however, these transport studies were still of only limited scope. The plan methodology was still limited in that it considered only traffic and transportation. Other elements of urban growth and change (such as changes in land-use) were ignored, meaning the plans presented an unrealistic picture of the future urban situation.

The publication of Mitchell and Rapkins "Urban Traffic: a function of Land-use" (1954) formally established the link between traffic flows and land uses.[12] They stated the idea that the physical interchange of people and goods was measurably related to activities on the land. This concept was first applied in a transport plan in Detroit, begun in the same year.

By estimating a future population for a design year (usually twenty years ahead) a host of other elements could also be derived to determine the nature of land-use in this 'ultimate' plan horizon. The population projection could be translated into numbers of households and - using a design standard of average densities - into the acreage of residential and service requirements. After subtracting the existing amount of development, an increment remained to be geographically distributed around the city. The number of jobs needed to employ the future population, over and above existing employment, could be calculated and land for commercial and industrial needs also allocated.

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11. Creighton (1970) p.129.

12. Mitchell and Rapkin (1954).

The land-use/transportation planning method was based on the planners concept of an ideal future urban form. In this sense incremental future amounts of land-use were allocated subjectively to conform to planners 'desirable urban form'. The circulation system was then mapped and extended to meet these future needs, and possible deficiencies isolated.

The 'breakthrough' in urban transport planning methodologies, from data collection procedures to the consideration of land-use, became known as master transportation planning. The procedure itself (see Figure 1.3)

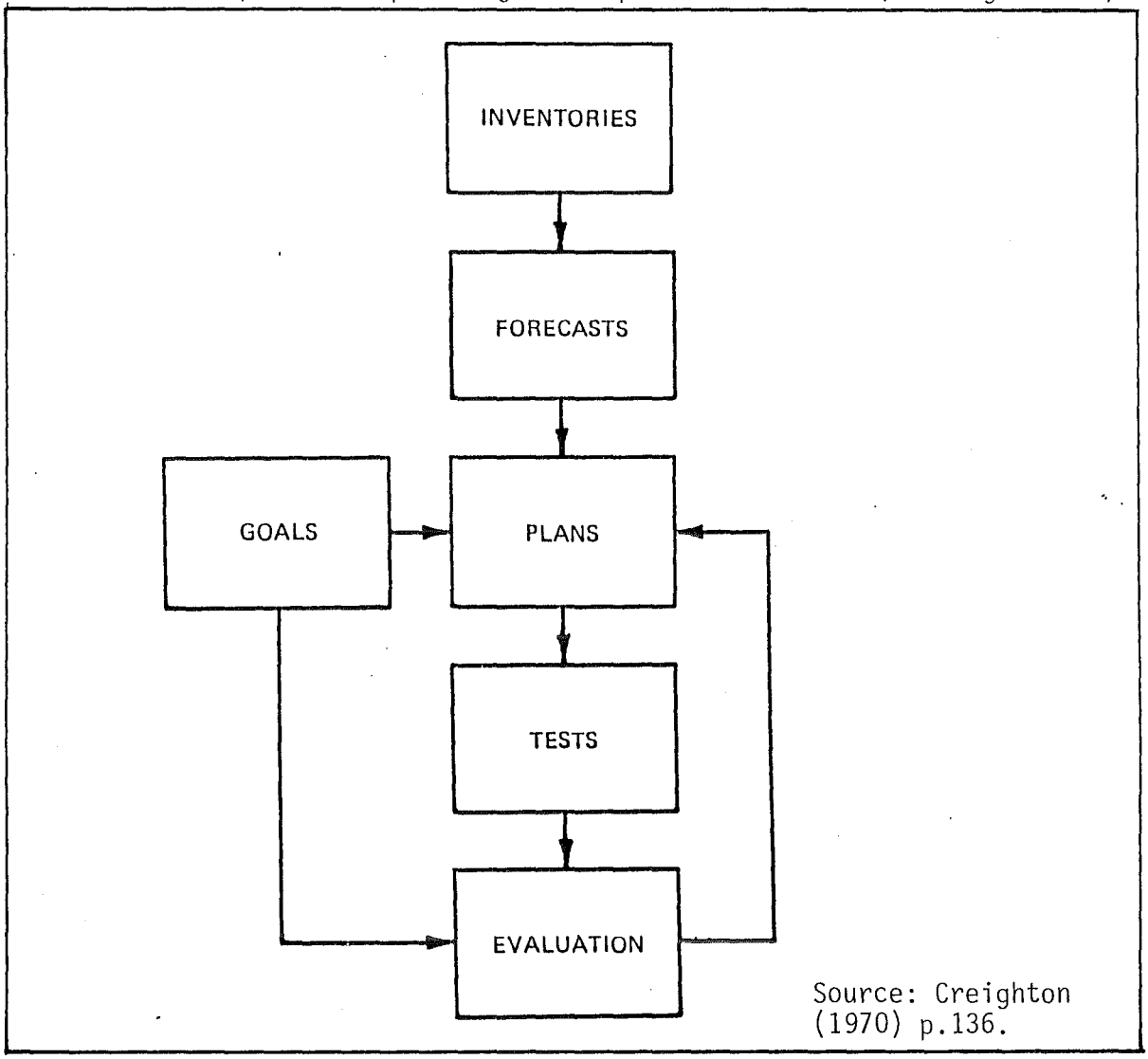

Figure 1.3 The master transportation planning methodology

had been developed for the assessment of the transport needs of whole urban areas and specifically to accommodate the needs of private vehicle travel and motorway building. In the chapter which follows, the

evolution of urban transport planning in the Christchurch context is examined, culminating with the application of such master planning procedures to a locally defined transport problem.

CHAPTER 2

CHAPTER 2

THE DEVELOPMENT OF TRANSPORT PLANNING IN CHRISTCHURCH

> "Christchurch is remarkable as an instance of a city deliberately planned."
>
> Sir Henry Wigram The Story of Christchurch, New Zealand Lyttelton Times Co., Christchurch, 1916, p.222.

From the very outset Christchurch was envisaged as a planned city, a tradition which has been largely maintained throughout the city's developmental history. And it has been the subject of transportation planning, or more specifically the establishment and efficient operation of the city's road transport network, which has played a major role in determining both the speed and shape of local development.

Indeed it is in the original design plan of the Canterbury Association's 'capital city' that the first example of road planning is evident (see Figure 2.1). This plan superimposed a grid network of streets over the flat area of land chosen for the Christchurch site (Figure 2.2). The chess-board pattern of city blocks so created was disturbed only by the roads running along the banks of the meandering Avon River, and by the need for a diagonal linkage from the estuary-port in the south-east, to the main road in the north.

This original pattern of streets was pre-planned. Street widths were to be a uniform one chain (approximately 20 metres)[1] and it was

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1. There was, however, some disagreement on this matter. Surveyor Edward Jollie, who prepared the street plan, preferred wider tree-planted boulevards on all major roads, but this idea was vetoed by Chief Surveyor Captain Thomas (Wigram, 1916, p.28).

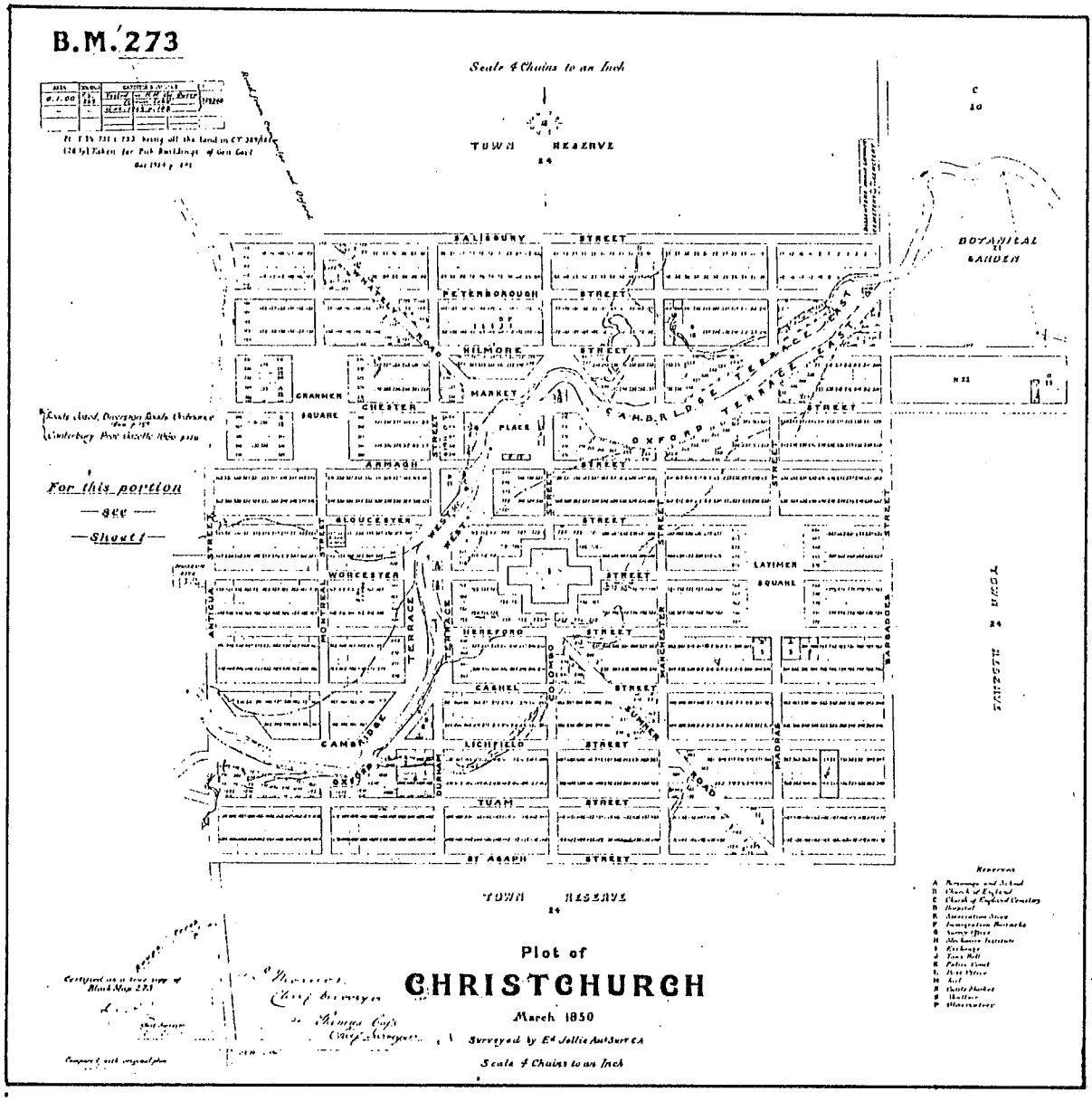

Figure 2.1 Edward Jollie's Plan for Christchurch, 1850.
(Department of Lands and Survey

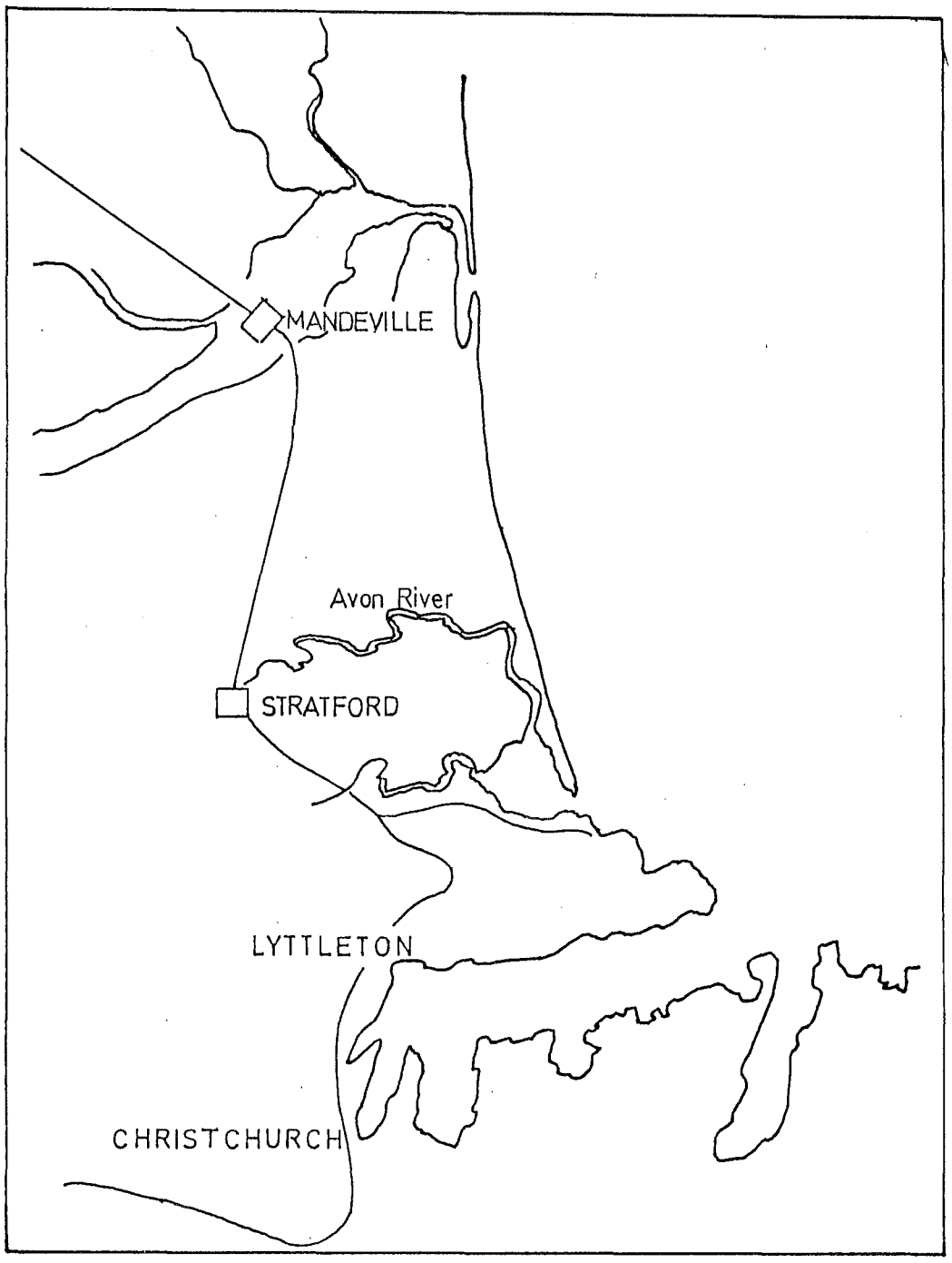

Figure 2.2 A Section of Captain Thomas's first sketch map of Canterbury, February 1949. (Canterbury Museum).

N.B. The site for Christchurch was later shifted to that marked as 'Stratford' due to insufficient land at the original site choice.

intended to have construction work completed in time for the arrival of the first of the Association's settlers. Financial difficulties, however, resulted in delays in the street-works programme and when the city's first inhabitants arrived (December, 1850) road construction had scarcely begun. This situation provides an early example of the gulf that has existed between plan-making and implementation in the case of the Christchurch road network.

This initial experience of the advance planning of road links was to go largely unrepeated as the city grew in population and areal extent. As many settlers opted to settle outside the boundary of the original city - in areas more suited to farming and other needs[2] - so the necessity for transport links to the 'capital' grew. Such links were not so much 'planned' as 'required' to serve existing demand. These routes assumed a radial nature, linking outer settlements to the central grid. The establishment of these links was, in turn, to provide a further impetus for commercial and residential development along their lengths. As a result ribbon sprawl became an early feature of Christchurch (e.g. Papanui, Lincoln and Riccarton Roads).

Within the outer settlements themselves, roading development was being largely provided as and where it was needed. Such "reactive" road-building was the result of the Canterbury Provincial Council's channelling of needed finances exclusively to the streets of the main Christchurch settlement (within the town belts) and their associated radials.[3] Faced with such a situation most settlers outside the town belts contented themselves by establishing private accessways to the nearest radial artery. Later these private routes were often conveyed as public roads,

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2. Such as timber supply in the Papanui district.

3. The provincial council took over local government responsibilities and functions from the Canterbury Association in 1853.

the most notable examples being the many narrow streets and lanes in the Sydenham and St. Albans districts, many of which remain today.[4]

Even after the ad hoc District Roads Boards assumed authority for road provision in 1863, the haphazard nature of road development did not cease. As settlement continued through the early decades of the colony's existence many formerly rural sections were further subdivided. Part of this process included, of necessity the laying out of street access, a task left to the developer himself. Moreover, the Roads Boards, inhibited by cost factors (notably that the rates obtained were insufficient to pay for all the work needed and the high cost of land purchase[5]) often found they had to appeal to the local residents themselves, in order to get the necessary contributions to undertake road construction. In such situations, where residents were willing and able to pay, the work was done (e.g. Winters Road; St. Albans).

> "Where the Board refused to undertake the forming and improvement of roads residents themselves had to do the work."[6]

By the turn of the twentieth century the basic skeletal nature of Christchurch's radial network had become established. This street system and the city growth pattern associated with it, were further enhanced by the introduction of public transport. From the introduction of the city's first tramway (1879) to the 1920's middle class households had moved outward along the tramway routes.[7] This reinforced the radial pattern of city growth. The decades to follow were to see a further extension of this development process, with infilling, between these radial streetcar suburbs taking place. This was to further necessitate the extension and expansion of the tramway network. By 1927

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4. See Morrison, (1948) p.29 and Banks (1980) pp.93-5.
5. Banks (1980) pp.97-98 - the rate was insufficient due to the expansion of roading exceeding rate increases.
6. Ibid, p.99.
7. Bedford and Sturman (1983) p.331.

the length of track stood at 54 miles (87 kilometres) - considerably more than that in any of the other major centres in New Zealand.[8] This in itself presented a problem to the local Tramway Board in that the city did not have the density of population to offset the cost of supplying the service.

It was not however until the later 1920's that further significant changes in the local transportation planning scene began to be felt. These changes derived primarily from two sources. The first involved the increasing reliance of the Christchurch populace on the motor vehicle. The importation of the first car into the South Island had occurred immediately before the end of last century, and whilst slow to become established, motorised transport grew considerably in popularity after the First World War. This took place largely at the expense of the previously more conventional modes (see Figure 2.3).

1	2	3	4	5	6		7	
Class	1915		1922		Per cent Increase		Per cent Decrease	
	No. per day	Weight in tons per day	No. per day	Weight in tons per day	No.	Weight	No.	Weight
I Mechanically propelled traffic	1,213	1,710	1,867	3,967	53.8	132	–	–
II Horse drawn traffic	670	617	361	405			46.1	34.3
III Horses and cattle	675	337	369	183			45.3	72.8
Totals	2,558	2,664	2,597	4,565	1.52	74.5		
Bicycles	7,779	700	8,014	721	3	3		
Grand Totals	10,337	3,364	10,611	5,286	2.65	45.2		

Note:—These censuses were taken on a single day of 9½ hours, viz., from 8 a.m. to 5.30 p.m.

Source: Galbraith, 1928, p.25.

Figure 2.3 Growth in motorized transport in Christchurch immediately after World War I.

8. Christchurch Tramway Board (1927) p.37.

The "Report upon City Highways and Bridges, 1928" identified traffic congestion as a growing problem. A number of causes of this problem were highlighted including the effect of tramcars occupying road space, the concentration of traffic at intersections, variations in road widths and roadside parking. The Report advocated improvements to a number of streets in the city area, such that they might act as relief roads for the arterials already experiencing some form of congestion. The Report also provides the first example of road planning with the motor-car in mind.

The author of this report - City Engineer A.R. Galbraith - saw the principal solution to the congestion problem in the possibilities opened up by the 1926 Town Planning legislation. Galbraith recognised the place of some form of normative planning in the Christchurch context. When commenting on the arterial road system and traffic circulation, he stated:

> "In order to discover the places that suffer from undue pressure, and the origin of its causation, it should be set out diagrammatically as existing and compared similarly with its ideal solution. Such [an] ideal will doubtless be more or less modified by local conditions but the salient advantage of this method is that the diagrams define and concentrate attention upon the objective." [9]

To the role of town planning in this process he noted further that:

> "...the sooner the Town Planning Scheme or "Layout" is placed on a definite and proper basis so that the position can be seen clearly ahead, the better it will be for all concerned, and the development of the City generally."[10]

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9. Galbraith (1928) p.50 - by 'diagrams' Galbraith is referring to maps of congestion points within the existing network.

10. Ibid, p.51.

Such recommendations were however, to go unheeded. No town planning scheme was ever fully developed in Christchurch (nor for that matter, most of the rest of the country)[11] due to a variety of reasons. These included a lack of strength of the legislation (the powers of the 1926 Act were permissive rather than obligatory on Local Authorities), problems of implementation of the Act itself (a whole Town Plan had to be produced and approved, not just sections of a plan - this was a mammoth task for local authorities), and financial difficulties during the Depression era.[12]

Whilst the town planning ideals languished in the period up to the Second World War, a revival - with a somewhat altered emphasis - was to take place in Christchurch during and immediately after the war. The continued peripheral expansion of the city (urban sprawl), with its consequent over-running of valuable farmland and stretching of the resources of public utilities (e.g. water supply, electricity, gas, sewerage disposal), had heightened awareness of the need for co-ordinated planning in the Greater Christchurch area. Moves toward a region-wide planning tier - a possibility encompassed within existing legislation[13] - were begun at a meeting convened by the Chamber of Commerce in 1941. This was followed two years later by the establishment of a Metropolitan Planning Committee, and the preparation of a co-ordinated city planning scheme was begun with some assistance from local authorities.[14]

The Committee's aim was to plan for an expansion in the total Christchurch population to 250,000, within a time frame of twenty-five years.[15] Transportation issues again occupied much of the Committee's time:

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11. Only 13 councils had managed to prepare and have finally approved, a Town Planning Scheme under this Act - see Robinson (1968) p.3.
12. N.Z. Parliamentary Debates, Volume 299, (1953) pp.688-93.
13. See 1929 Town Planning Amendment Act.
14. Christchurch City, Lyttelton and Riccarton Boroughs, Waimairi, Heathcote, Paparua and Halswell County Councils all co-operated in the task of Scheme Preparation.
15. Christchurch Metropolitan Planning Committee (1948) p.25.

> "The street pattern...is unquestionably the most important single factor in a town planning scheme."[16]

However, on the question of traffic congestion the final report was to conclude that the existing road network - with only minor extensions (Figure 2.4) - would be adequate to meet movemenet needs throughout the twenty-five year planning period.

By 1953, with the problems of the earlier Act obvious, another piece of planning legislation was being prepared for the statute books. This Act (the 1953 Town and County Planning Act) asserted the demand for compulsory district planning and the provisions allowing consenting local authorities to combine to produce broader regional guidelines. In Christchurch this latter challenge was quickly adopted. The Metropolitan Planning Committee, made up largely of a conglomerate of local authority and civic groups was replaced by a formally constituted Christchurch Regional Planning Authority (C.R.P.A.) composed of local authority representatives.[17]

The new Regional Planning Authority's principal task, as defined in the 1953 Act, involved the preparation of a co-ordinated plan for all major aspects of development within the Regional boundary. This Regional Scheme was to then serve as a reference point to which the individual local authorities were required to turn when preparing District Schemes. However, since the C.R.P.A. had only limited planning resources at its disposal, the preparation of the Regional Scheme was divided into various sections. The establishment of a rural zone as the first section of the Regional Scheme was defined as the first priority and, as a result, the consideration of transport issues on a region-wide basis was temporarily shelved.

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16. Christchurch Metropolitan Planning Committee (1948) p.17.

17. The Regional Planning Authority area encompassed all of the Christchurch City, Riccarton Borough, Waimairi and Heathcote County Councils, and parts of both Paparua and Halswell Counties (see Figure 2.5).

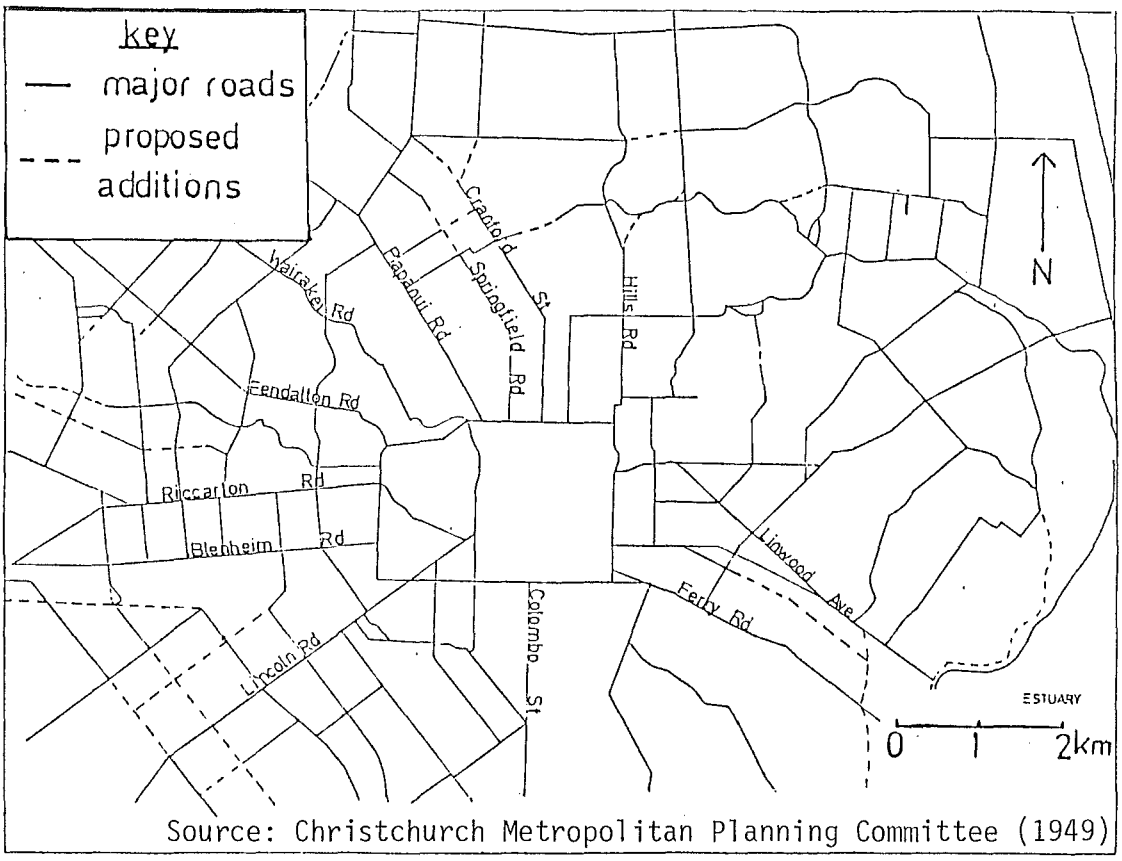

Figure 2.4 Metropolitan Planning Committee Recommendations for extension to road network - 1949.

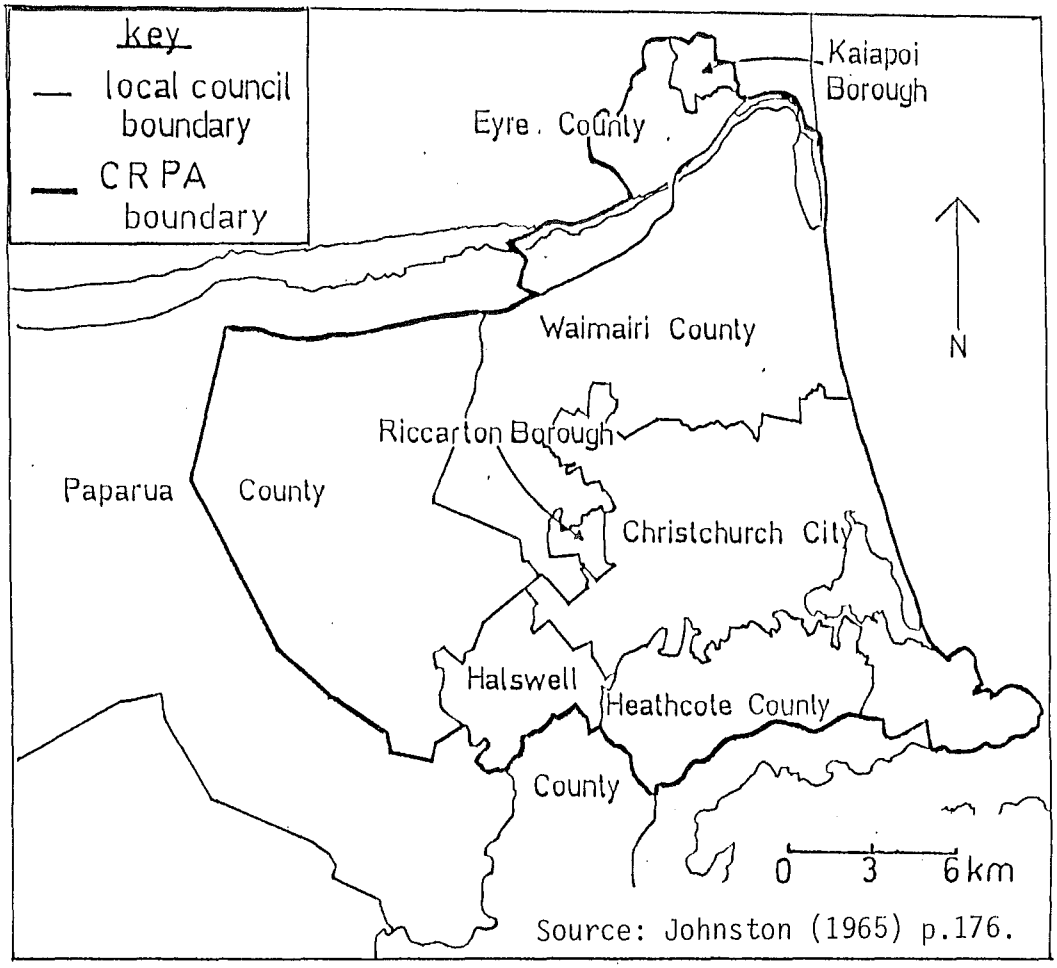

Figure 2.5 C.R.P.A. area (1959)

This situation did not, however, last long. Agitation for Christchurch authorities to begin planning major road works was coming from central government sources, as a response to the continued rates of growth in motor vehicle usage. The newly formed central highway authority - the National Roads Board (N.R.B.) - sought the co-operation of the C.R.P.A. in developing a plan for the extension of major state highways into the local built-up area.[18] In a reflection of overseas experience such highway development was viewed by the Board as a means to combat urban traffic congestion - a problem Christchurch was already experiencing.[19] A New Zealand example of urban highway planning already existed by this time in Auckland, and this was in the forefront of the N.R.B.'s mind when it suggested a similar scheme should be begun in Christchurch.

The N.R.B. in assessing the needs for the state highway network had already examined the place of Christchurch in their plans. As such their highway planning recommendation to be considered by the local authorities was accompanied by a plan for the construction of the northern and southern motorways up to the existing urban fringe.[20] In a sense this latter move imposed the need for motorway planning, or at least the consideration of broader transport issues, on the local authorities. Such consideration would of necessity, take place at a metropolitan wide scale - not only due to the transportational needs but also the urban development implications that might result from these.

The C.R.P.A. therefore appeared the logical choice to undertake the task at hand. This was confirmed by the establishment of a Traffic

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18. See "The Press" 14 August 1956, p. 12.

19. In "The Press" November 22, 1955, p.1, the results of a survey were released which revealed Riccarton Road to be the country's second busiest roadway.

20. The Press, 14th August, 1956, p.12.

and Transport Sub-committee of the Authority in October 1956, following a recommendation from all concerned local councils.

A MASTER TRANSPORTATION PLAN FOR CHRISTCHURCH

Roading and transport issues had been forced back on the regional agenda. The terms of reference given the Traffic and Transport Sub-committee were to:

> "...make recommendations about traffic facilities, their type, form and location so that the transport of goods and people may be carried out as efficiently as possible."[21]

In this they were charged not only with the consideration of the highway needs, but also with examining the whole urban transport question as it pertained to Christchurch. The traffic and transport issue was to be considered from the C.R.P.A.'s broader planning outlook. The "problem" had been framed in the context of the whole Christchurch road network.

It appears the local authorities, in providing for regional consideration of the issue at hand, had themselves realised that a new approach to transport planning was now required. As they were to later comment, piecemeal adjustment to congestion problems where and when they arose was unsatisfactory, being simply a transference of the problem spatially in the network.[22] What was required in the new context, was a holistic outlook, approaching the network as a complete system. Furthermore, such an approach would point toward a complete solution in one broad sweep, which it was thought would also reduce 'wasteful expenditure on unco-ordinated projects.

That a 'problem' did exist, or at least was imminent, had apparently been assumed from the outset of the Sub-committee's

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21. C.R.P.A. Traffic and Transport Sub-committee Minutes p.8 (19th October, 1956).

22. Ibid, (5th September 1958) p.263.

existence. Confirmation of this was finally received with the announcement of the results of a cordon-count survey, undertaken by the C.R.P.A. in March 1957. When the figures from this survey were compared to those from a similar count five years previously, they indicated a traffic increase during that period of thirty-five per cent.[23] This led the Sub-committee to conclude:

> "That though Christchurch has no critical problems at the present time, it may be on the threshold of a major one."[24]

After further investigation of the scope of this problem, a further meeting of local authorities within the region was called. At this meeting (September 1958) the Sub-committee announced its recommendation that a comprehensive study of the traffic situation be begun. This recommendation combined with the previously announced N.R.B. policy to pay for arterial routes through cities and larger towns,[25] resulted in the acceptance of the M.T.P. study for the Christchurch region. A Traffic and Transport Advisory Committee under the C.R.P.A. was formed, comprising representatives from local bodies, government departments and road user organizations (e.g. Automobile Association and Road Transport Workers Union), whilst a Technical Sub-committee was also formed to consider engineering and other specialist planning aspects.[26]

THE PLAN-PROCESS BEGINS

With this administrative structure established (see Figure 2.6), the first task in the planning process was to begin the collation of

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23. The Press, 23 March, 1957, p.8.
24. Traffic and Transport Sub-committee Minutes p.142 (20th June 1957).
25. The Press, 28th August, 1957, p.16.
26. C.R.P.A. Annual Report 1959-60, p.23.

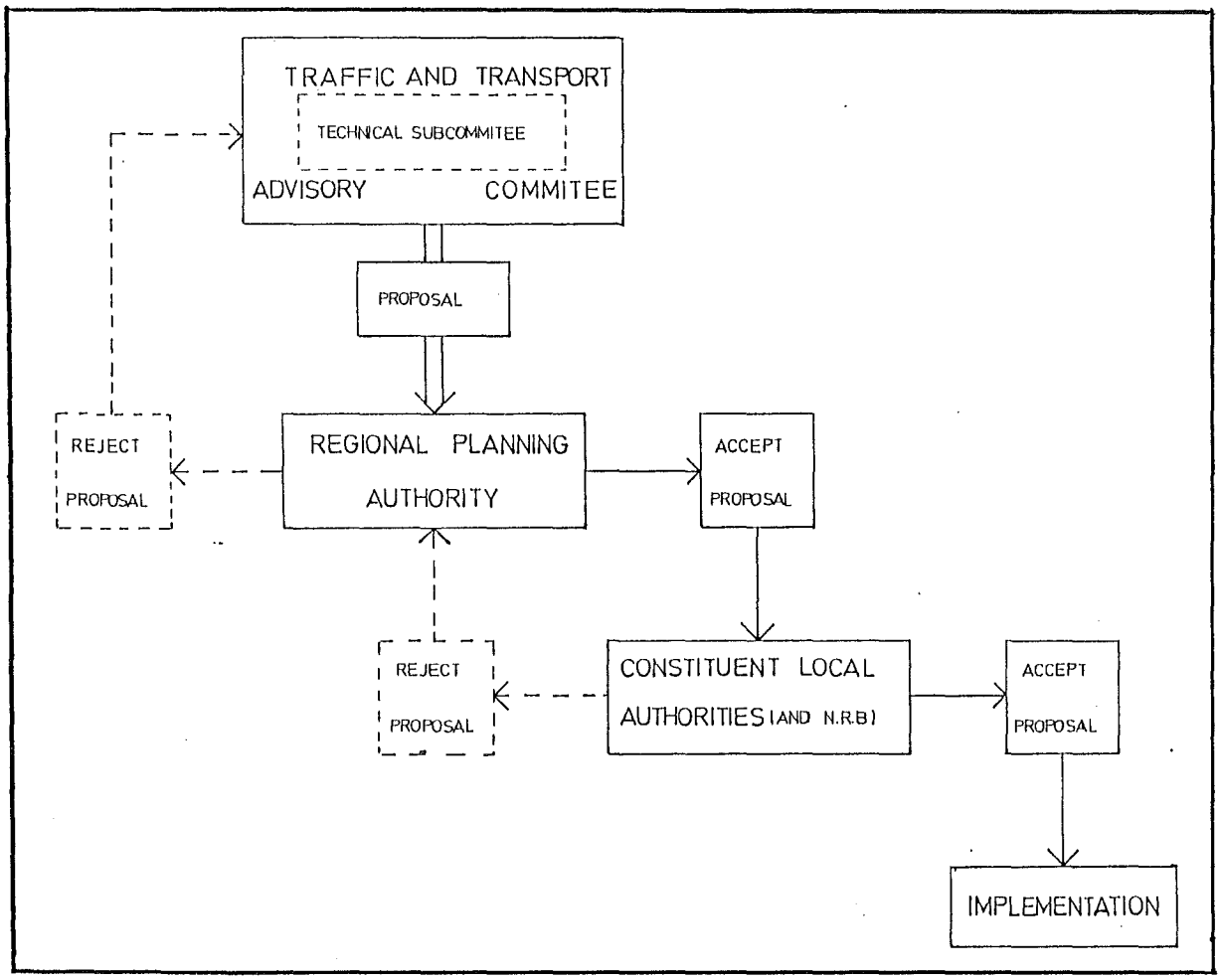

Figure 2.6 Administrative Structure of master transport planning - Christchurch 1959.

relevant information on the local traffic situation. This exercise was itself to be undertaken along two major lines.

The first of these involved the collection of data on existing traffic and travel patterns. A variety of survey techniques were used to obtain this information including the use of a home questionnaire, questionnaire for public transport users, interviews of vehicle occupants and vehicle counts at a number of points.[27] This data was then analysed to provide an outline of movement patterns - the number and types of vehicles used, their origins and destinations - within the urban area for this 1959 'base year'.

The second major approach to data collection involved a broader consideration of regional time series statistics. In this sense transportation had been recognised as a derived demand - movement did not take place in isolation, rather trips were made for particular purposes be it work, shopping, recreation or other activities. The data collected therefore concentrated on trip generation variables, including figures for population, employment and a land use assessment. Information on vehicle ownership rates in the region, and overseas trends in this respect, were also collected.

The accumulation of such a substantial data base took some time, however with its collection the planning process could be further advanced. The second task facing the planners involved the estimation of future traffic trends with 1980 being chosen as the M.T.P.'s planning horizon. The forecasting procedure was initiated with the derivation of a mathematical formula which related the travel patterns for 1959 with the trip generation variables for that same year. Using estimates of the values of these same traffic generation variables for the planning

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27. The survey process has been comprehensively covered in Johnston (1965), Chapter 3.

horizon year (1980),[28] the formula was again put to use to predict the amount of future travel. From this an overall traffic growth factor of 2.22 was derived for total city traffic volume over the following twenty years (1959-80).

Having determined the numerical extent of future traffic, the question of its spatial distribution and whether such volumes would result in congestion through the road network, remained to be assessed. This was the spatial component of the future traffic 'problem' and its assessment was based on further estimates of land-use characteristics for the forecast year. Such estimates would provide an insight into possible trip patterns in 1980.

The assignment of 1980 traffic volumes to the 1959 street network (without any street changes) sought to further clarify the spatial picture. Each predicted 1980 trip was assigned to a traffic route, based on the assumption that the most direct and convenient route for each journey would be taken.[29] This process was undertaken using a method developed in America (the Fratar method).[30]

The assignment produced (Figure 2.7) presented a picture of severe overloading on the existing network (Figure 2.8) particularly with regard to the radial approaches to the central city. The spatial nature of the transport problem had been confirmed. What now lay ahead was the "real problem" - how best to meet the deficiency that had been revealed.

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28. Population estimates predicted a 58% rise in regional population between 1959 and 1980, (196,000 people to 311,000) employment was seen as rising by a similar amount (from 70,000 to 114,000) whilst motor-vehicle ownership would expand by 129% from 66,000 to 152,000 vehicles. See M.T.P. Report No.47, p.2-3, November, 1961.

29. The possibility of congestion-delay influencing trip routing was purposely ignored. See M.T.P. Report No. 47 (November 1961) p.2-3.

30. Refer to M.T.P. Report No. 46, p.1. (October, 1961).

Figure 2.7 1980 traffic assignment to 1959 street network.

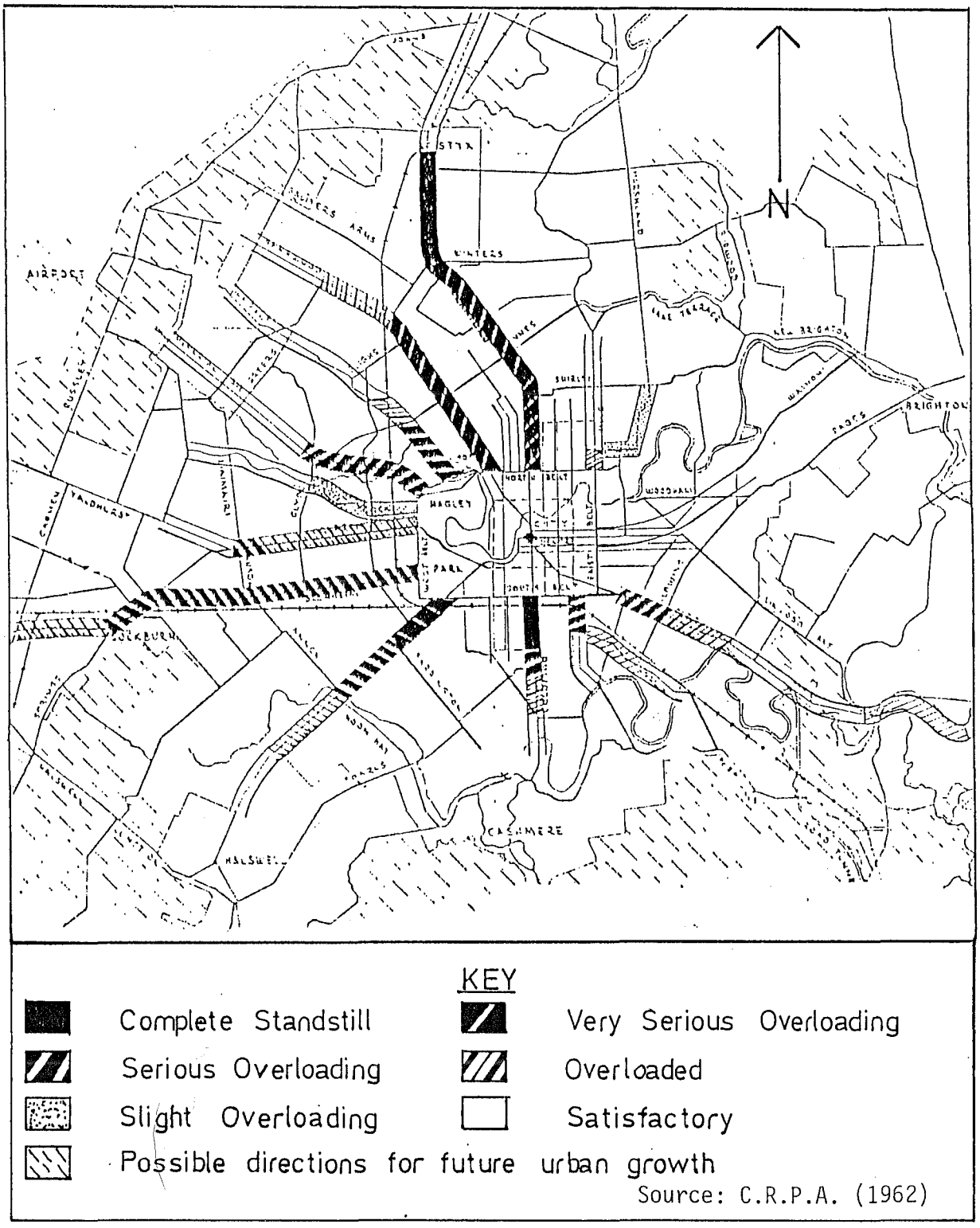

Figure 2.8 1980 Congestion Situation on the Radials

DEVISING A SOLUTION

The completion of the inventory and forecasting stages of the M.T.P. marked what was to be a significant watershed in the course of transport planning in Christchurch. Up until this time, the lack of an accurate data-base had prevented any detailed consideration of the type of response required to meet the city's assumed future traffic problem. The completion of the Regional Planning Authority report "A Discussion of the 1980 Traffic Situation and its Implications" (November 1961)[31] meant, however, a point of transition had been reached in the process of plan formulation. With the stage of problem presentation effectively complete, planning attention could be focussed upon the type of solution needed.

This is not intended to suggest, however, that consideration of the city's future transport needs had been completely stalled in the period prior to the production of this report. On the contrary, it appears that considerable advances had been made in respect of the determination of possible policy options. Discussions within the Traffic and Transport Committees during this early period in the development of the M.T.P. had gone a considerable way in reducing the range of practical choices open for final planning consideration. Since these early decisions helped largely to determine the direction planning process was to take, it is to this sequence of decision-making that attention must first be directed.

As was noted earlier,[32] the course of urban transport planning throughout much of the developed world was, at this time, dedicated largely to the provision of upgraded transport facilities where demand required. In Christchurch too, the issue which initially confronted

31. M.T.P. Report No.47 (November, 1961).

32. See above, p. 22.

the Traffic and Transport Committees had been viewed as one of determining the nature of transport facilities to be supplied.[33] In this context the immediate planning task had become the formulation of objectives and minimum standards. These had to be clarified before the problem of determining the nature of the physical network could be addressed.

Whilst the traffic survey had revealed the extent of the traffic problem in purely numerical terms (particularly that facing the central city), decisions were still required as to the type of facility which would best serve these future traffic needs. Past methods of transport planning had adopted a narrow view of the congestion problem but the master planning strategy now adopted in the local M.T.P. sought to go beyond such an approach. A broader, more integrated view of congestion as a problem affecting the whole network, not isolated intersection or routes was advocated. The aim of the final plan was to be the alleviation of the congestion problem from the city's road system - a planning strategy which by its very expression seemed to prescribe a radical re-think of the local transport situation.

ASSUMPTIONS, OBJECTIVES AND INITIAL PLAN OPTIONS

As with any forecast situation, the process of predicting the future traffic volumes for 1980 Christchurch had meant the making of a number of assumptions on traffic trends in the planning period. The acceptance of such assumptions so early in the planning process, necessitated that they be carried on throughout the remainder of solution formulation.

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33. Note the original Sub-committee terms of reference in October 1956 - see above p. 23.

The principal assumption made in this context concerned the rate of motor vehicle usage during the plan period. The number of trips per vehicle for the 1980 plan year was assumed to be the same as that recorded in the 1959 survey.[34] In effect this meant that the planners and decision-makers within the Traffic and Transport Committees were indeed ignoring the deterrent effect of elements such as congestion itself or a lack of parking supply. The reality of people not undertaking trips or changing modes due to the presence of these elements, remained unconsidered. An assumption as to the nature of travel patterns in this future planning period also limited the scope of solution consideration. It was assumed that 1980 traffic movements would again reflect the 1959 patterns, although being somewhat larger in terms of quantities.[35] This assumption - made in the period before the proliferation of major suburban shopping complexes - goes a long way to explaining why the M.T.P. concentrated so intently on the needs of the central city.[36]

The acceptance of these assumptions as the basis of the planning process, however, raises the possibility that the task of solution formulation became geared simply to assumption fulfilment. The application of such set conditions from the outset, may indeed have also reduced the range of possible solutions to be considered later in the process. As such the assumptions could have so constrained planning thought that they became self-fulfilling. Such misgivings about the objectivity of the planning process were to be voiced later when the final outline solution was eventually produced (see below p. 47).

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34. See M.T.P. Report No. 47, p.2-3.

35. Ibid.

36. Johnston (1965) p.81, in a summary of the 1959 Survey results, notes that 40% of vehicle trip origins or destinations fell within the area of the Central Traffic District.

Once the task of determining the parameters of planning - such as the predicted future situation and the basic assumptions - had been completed, the question of selecting objectives - what the plan sought to produce - had to be addressed. The Regional Authority report "Progress on Alternative Proposals" can be seen as being the culmination of this latter part in the plan-making sequence. In this report three brief objectives were outlined:[37]

(1) that the final plan should provide for the establishment of an urban arterial road network, including motorways where necessary;

(2) that the plan provide an indication of the future requirement of parking and its spatial distribution; and

(3) that provisions be made for the development of a rapid public transport service for the city.

Taken together, these objectives were intended to provide the basis of a modally integrated final plan.[38]

When considering how these objectives came to be formulated, attention must again be directed back to the beginning of the planning task somce five years earlier.

In Christchurch, from the very outset, planning had been concerned almost exclusively with preparing a design for a high speed motorway network. It will be remembered (page 22), that the N.R.B. in recommending that a transport study be begun were themselves principally concerned with extending state highways into the city. Such a proposal was introduced for the formal consideration of the Traffic and Transport Sub-committee as early as September 1957, when initial plan proposals were called for. This scheme,[39] produced by

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37. M.T.P. Report No. 50 (February 1962), p.2.

38. Ibid.

39. See C.R.P.A. Traffic and Transport Sub-committee Minutes, 27 September, 1957, p.155.

Geoff Suggate (a Ministry of Works engineer seconded to the Sub-committee as a technical adviser) featured the construction of major arterial motorways linking the Northern and Southern state highway outlets from the city. The scheme, as might have been expected considering its authors background, conformed to contemporary N.R.B. thinking in proposing that the motorway link should run as close as practical to the city's commercial and administrative centre. This, it was argued, would cater for the needs of intra-urban travellers whilst also emphasising the place of Christchurch in the regional and national road system.[40] Such a proposal also held considerable advantages in the eyes of the local authorities since the N.R.B. would also be involved - thus contributing to the preparation and financing of the scheme. Furthermore, the scheme had the added attraction of being able to be extended in the period after 1980. What this meant was that the development of the motorway network - being as it was, superimposed over the existing road network - could be further extended beyond the 1980 planning horizon.

At the same time as Suggate's plan was submitted, an alternative programme of roading development was also introduced for planning consideration. This scheme was another product of the Sub-committee's technical staff. Coming from John Nauta, a former member of the City Engineer's department and, like Suggate, seconded to the Sub-committee, the proposal adopted the approach of road widening to meet any growth in traffic numbers. Rather than the construction of completely new major arterial routes Nauta advocated the gradual development of the

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40. This conformed to Suggate's view that "In view of the importance of Christchurch in the South Island as well as in Canterbury, the location of the (highway) outlets should be such that they form part of the South Island major highway system with the city centre as a focal point." Ibid, 27 February, 1957, p.25.

radials, as traffic increases dictated, till eventually they achieved motorway standards (i.e. high speed, limited access routes).[41]

Nauta introduced a further element to his proposal. He expressed the opinion that transport planning had for too long been concerned with moving vehicles not goods and people. He noted:

> "A deterrent to the solution of the problem (relief of congestion) is the fact that thinking up to the present time has been largely in terms of moving vehicles into the central area of Christchurch rather than moving people and goods into it."[42]

With reference to this he advocated that no motorways should be developed in the heart of the city. Instead, a park-and-ride system should operate, with commuters parking in space provided around the four town belts (Bealey, Fitzgerald, Moorhouse and Deans Avenues) and travelling into the inner city on shuttle buses. Such a proposal could be further reinforced, he continued, by placing restrictions on private vehicle use in the central area (e.g. parking restrictions, one-way streets).[43]

It can be seen that the decision-makers in the Christchurch urban transport planning scene, had a clear choice of policy options from the outset of their task. One involved a limited car only choice, whilst the other a more integrated plan utilizing a number of modes. However, before a decision could be made on the nature of the response to be adopted, it was deemed necessary to begin the comprehensive survey inventory. As such, solution consideration was postponed till more information was available.

When the solution formulation task was again begun in earnest in late 1961, the basic choices road widening/public transport and

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41. M.T.P. Report No.12 (September, 1957) p.2.

42. Ibid, p.1.

43. Ibid, pp.1-2.

motorway provision still apparently remained open for planning consideration. However, with the establishment of the new administrative structure (the Traffic and Transport Advisory, and Technical Committees in late 1958) and the adoption of the master planning strategy, the road widening option appears to have fallen out of favour. Whilst road widening was "considered" again, the survey results had revealed, to the planners at least, that such an option was impractical because:

> "...so many roads would require so much widening..."

and

> "...it might not be possible to develop routes where, in some cases, they might be needed."[44]

As if to provide the definitive rejection of the widening option it was further stated that:

> "In addition it appears that cities in other parts of the world, with more experience than ourselves, are embarking upon schemes involving arterial systems in preference to the wholesale improvement of existing facilities."[45]

The experience from overseas was used to justify the rejection of widening as a choice, and in doing so, strengthened the case for completely new motorway route construction. The motorway had become this time period's answer to urban traffic problems and Christchurch was reflecting the trend.

The public transport option received a similar fate. With local bus service patronage declining in the face of the onslaught from the car, proposals for greater investment in this mode became less popular. The suggestion that a park-and-ride possibility be programmed for 1980 Christchurch was rejected with the conclusion that neither the city's population nor its layout would be conducive to such a system. Again overseas experience was used to justify this conclusion - the Traffic

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44. M.T.P. Report No.50, p.3.

45. Ibid.

and Transport Committee technocrats claimed that park-and-ride was only successful in larger cities with populations over half a million.[46]

With the statement

> "...we must accept the fact that people will increasingly use their own cars, and therefore we must try to provide the facilities...to enable them to do so."[47]

the planners revealed the true nature of the M.T.P. Based upon assumptions of continued vehicle usage, and being concerned from the outset with facility provision, the Master Transport Plan as such, was never a reality. Whilst its rhetoric proclaimed a modally integrated outlook the reality of the planning process never ventured far beyond motorway options. The Master Transport Plan had been finally revealed as a Master Roading Plan.

Summary

The purpose of this chapter has been to introduce the planning or 'decision' situation faced by urban transport planners in Christchurch, in the 1950's. Urban transport planning had, up to this time, been largely 'reactive' - responding to demand after it arose. However, the continued rise in car usage in the era after World War II - created an impression that the city faced an imminent crisis of traffic congestion unless something positive was done to avoid it. This, in concert with the development of a master transport planning methodology, and the establishment locally of a regional planning tier, was soon to result in the initiation of a Christchurch Master Transportation Plan in September 1958.

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46. M.T.P. Report No.50, p.3.

47. Ibid.

The M.T.P., as a new approach to urban transport planning, attempted to view the possible problem in holistic terms. Not only did the spatial outlook of urban transport planning expand - providing an 'integrated' study of the whole metropolitan transport system - but the Plan was intended to be integrated in terms of travel mode and urban development.

Despite the integration aim, it appears from the outset that existing perceptions of the nature of the problem and indeed the means adopted to define the 'problem', served themselves to constrain the range of planning options open. From its initiation - after a recommendation for an urban highway study - the M.T.P. looked specifically to car-based, roading solutions. With contemporary overseas experience also concentrating on roading 'supply' through provision of bigger and better facilities, the Christchurch Plan seemed destined to reflect the trend.

The methodology of master transport planning served also to constrain choice in that it aimed to provide a complete, 'one-off' plan solution. This in itself counted against minor adjustment to the existing network, which was discounted on the grounds it would only transfer a problem spatially through the network. A radical restructuring of the transport network seemed required.

Even the assumptions incorporated in the Plan method served to direct the course of decision-making. The assumption that travel patterns in the plan horizon would reflect existing patterns led to a car-based solution option.

Whilst the M.T.P. was intended to be a rational attempt to define a transport problem and find the 'best' practical solution, the reality seemed based more on subjective interpretations of the situation confronted.

CHAPTER 3

CHAPTER 3

DESIGNING THE PLAN

Basic Planning principles selected

With the need for a road based solution established, the task confronting the members of the Traffic and Transport Committees became one of establishing the basic form the "improved" road network would take. In determining this, planning consideration was based upon the concept of traffic canalization. Originally developed in the 1930's by H. Alker Tripp,[1] this concept involved the devising of a road pattern which physically segregated traffic according to its travel needs.

In Christchurch, the application of the canalization concept involved the designation of road facilities according to their perceived role within the network. A three tier system of road types was adopted.[2] The "backbone" of the eventual design plan was to be made up of a primary road system. This was to be designed to perform the dual task of moving through (state highway) traffic, and commuter traffic loads around the urban area quickly and in large quantities.[3] The principal means by which this was to be achieved in the face of predicted traffic growth, was via the provision of a system of limited access motorways, geared solely to the facilitation of vehicle movement.

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1. Tripp (1942). This concept received most notable application in Abercrombie's County of London Plan 1945.
2. C.R.P.A. (1962) pp.27-34.
3. The term used to describe the ability of a route or the network as a whole, to move large numbers of vehicles without the problem of congestion is its "level of traffic service". A high level of traffic service meant the network was performing in function efficiently, low levels meant that congestion was appearing and unnecessary delays resulting.

At the opposite end of the proposed roading hierarchy were the local, all-purpose streets. These were streets which served the movement needs of their surrounding land-uses - generally private residences or places of employment. These local streets, being the points of entry or exit to the road network for the majority of travellers, were in turn linked to the primary motorway system through an upgraded network of secondary roads. Whilst also providing access to adjacent land uses, the role of the secondary system was to feed traffic into the motorway arteries, at a limited number of interchange points.

The advantages of this hierarchical configuration, were seen by the planning technocrats in terms of safety and movement.[4] Where the largest numbers of vehicles converged - previously the intersections of the major radial routes - the proposed new traffic facilities were designed to move such volumes with little interruption to flow and thus maintaining traffic service. Furthermore, short journeys such as for local needs would not necessarily have to enter the primary network at all, whilst journeys through the urban area would utilize the motorways to bypass the radials and city centre. As such all roads in the city network were designed to serve distinct functions.

With the M.T.P. intended to be a complete, one-off plan for all transport needs, other projects - notably those suggested for state highway development to the fringe of the urban area,[5] the proposed Lyttelton road tunnel,[6] and the importance of the link to the International Airport - had to be assimilated into the planning process.

At the point of physically designing the Outline M.T.P. proposal, a top-down planning strategy was applied. In this respect, the primary

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4. C.R.P.A. (1962) pp.27-34.

5. See above, p.

6. The Lyttelton road tunnel had been proposed for some years and work was eventually begun in 1961.

network was of core concern, providing as it did the backbone of the eventual Plan result. By referring to the projected growth forecasts for the various areas of the city, and to the roading needs already established (the Lyttelton tunnel and the like) the Traffic and Transport Committee planners produced a number of first draft motorway location schemes.[7]

Evaluation of the effectiveness of various schemes in 'solving' the perceived congestion problem was carried out by discussion within the Committee. As such the approach was essentially a subjective assessment of each proposals relative merits and drawbacks in the technical sense.[8] All proposals (eight were considered by the time this locational stage was eventually completed) involved various combinations of three major routes: a northern outlet, southern outlet, and east-west Fendalton-Avonside route. The major differences were in where these major features were to be finally placed. Each successive plan was intended to improve on the deficiencies apparent in the previous one to find the most desirable form for the primary network (see Figure 3.1). Following the subjective analysis a full assignment and evaluation of 1980 traffic flows was made on the considered 'best' options.

The final outcome of this refinement process was forwarded for full Regional Planning Authority approval in September 1962.[9] This Outline Plan located the motorway routes on the basis of providing a "tangential" approach to the city centre (see Figure 3.2). The concentration of western suburbs traffic by the former radial network on two entry points (Hospital Corner and Carlton Mill Corner), was therefore effectively eliminated.

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7. A summary of the various options was later produced as M.T.P. Report No.51 (February 1964).
8. M.T.P. Report No. 50, pp.6-7.
9. M.T.P. Report No. 56 (September 1962) later published by the C.R.P.A. (see C.R.P.A. 1962).

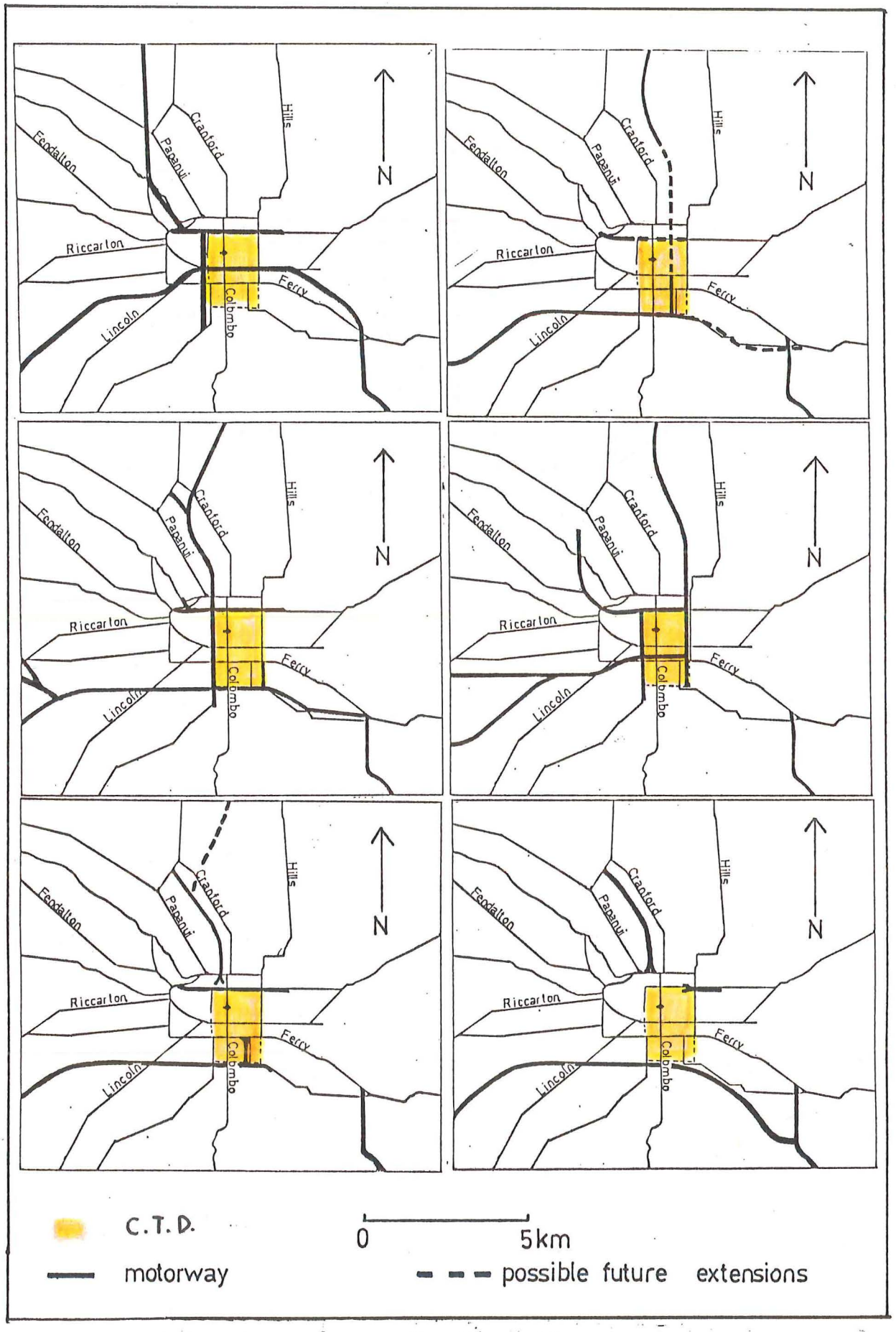

Figure 3.1 Major M.T.P. motorway location option

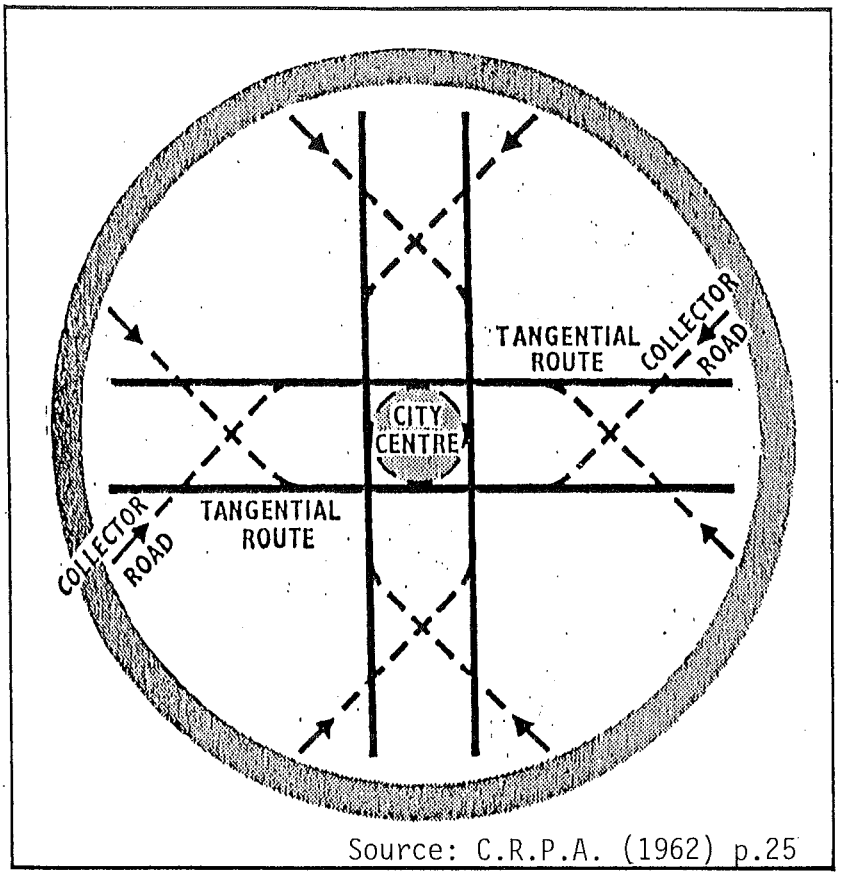

Figure 3.2 The Tangential Approach

In the earliest plans devised by the Committee planners, the Northern motorway outlet had been placed on the western side of the C.B.D. (Montreal Street and out on a line parallel to Papanui Road). However, problems of traffic distribution inherent in this option - notably low levels of traffic service along Montreal Street due to severe overloading - negated such a prospect. Instead the eventual Outline Plan opted for the positioning of the Northern Outlet east of the Central City, linking with the Southern Motorway at Wordsworth Street (see Figure 3.3). Whilst this seemingly ignored the forecasted problem of overloading of the Western radials (refer back to Figure 2.8), this difficulty was to be overcome by encouraging use of the Northern motorway by providing large-scale parking along its central section. This would result in the centre of gravity of trip destinations to the central city changing and the motorway system becoming more attractive to travellers to the C.B.D.

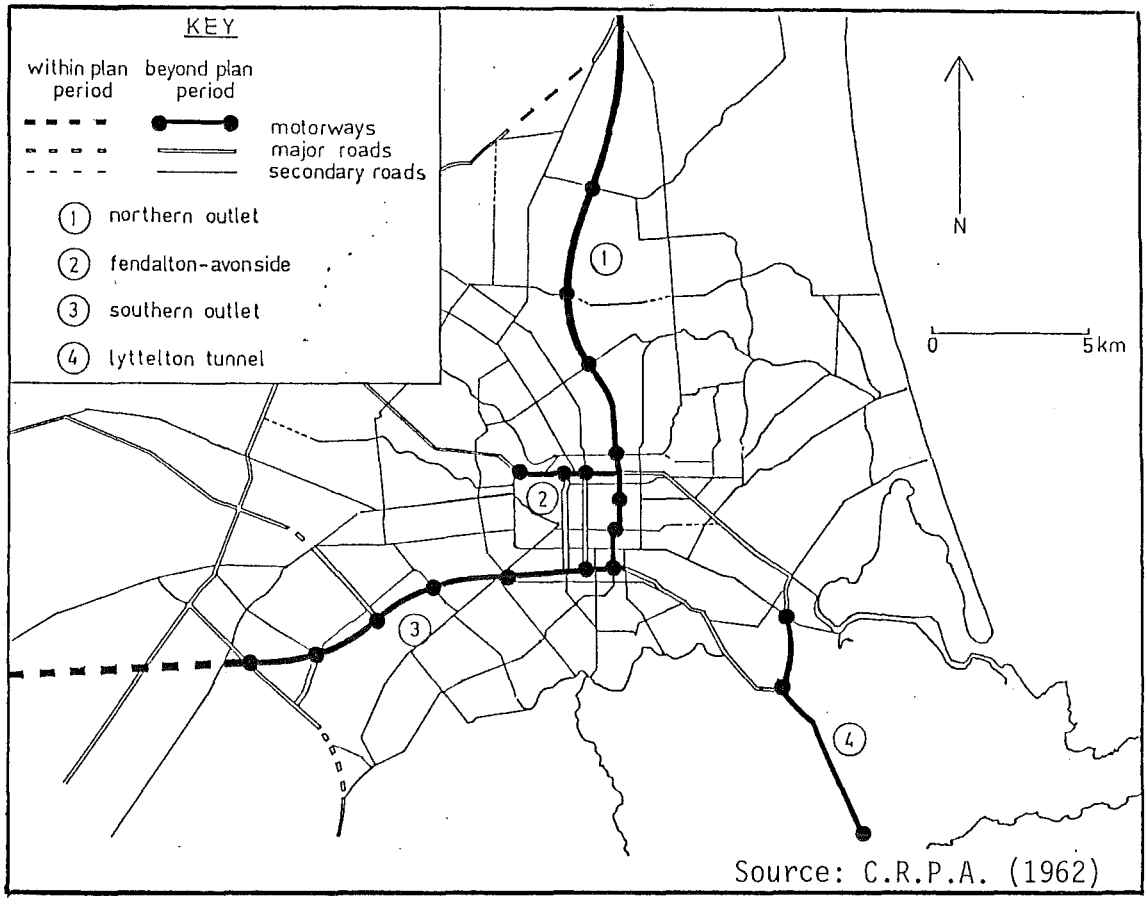

Figure 3.3 The 1962 Outline Master Transport Plan

The Southern Outlet, positioned along the Southern boundary of the C.T.D. would provide similar tangential access to the Sydenham industrial zone. The location of this route had, from the outset, been reasonably clear-cut. Only two locational options, Moorhouse Avenue and a Brougham Street line, were feasible. The existing nature of the Moorhouse Avenue route, as an all-purpose access road, and its lack of a suitable Eastern extension (apart from the already over-crowded Ferry Road), meant this option proved unsatisfactory. The Brougham Street line was therefore proposed.

The East-West Fendalton-Avonside link was intended to act primarily as an alternative to the routes converging at Carlton Mill corner. This link extended from Fendalton Road across Hagley Park, running parallel to Salisbury Street to link to the Northern Outlet. It was expected this route would cater for the predicted growth in movement from the airport and Western suburbs, whilst later it could be extended into the Eastern suburbs when required.[10]

The provision of such motorways (some 20 miles in all), plus sundry associated improvements to the remainder of the road network, was not however possible without some cost being incurred. Construction estimates at the time the report was released (September 1962) were put at £20 million for the primary system alone,[11] however, expenditure on other improvements and the disruption to areas through which the motor-ways would pass, increased the cost. Although released as an "outline" only (the detailed construction plans had not been drawn up), it was obvious that much disruption to certain suburbs was likely. This feature served to create some early animosity toward the proposal from concerned residents.

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10. C.R.P.A. (1962) p.31.

11. "The Press" 11th September 1962, p.14.

The M.T.P. had, however, been also viewed as an opportunity to rehabilitate dilapidated city housing stock.[12] In this sense, and for the obvious cost saving benefits the motorways seemed to traverse areas of low-income housing - placing a heavy burden on the inhabitants of these districts.[13]

This outline proposal received the official stamp of approval from the full Regional Planning Authority when "accepted in principle" on September 4th, 1962. The Authority thereby adopted the Outline proposal as its Master Transport Plan. This, however, did not mark the end of planning endeavours - on the contrary, much work remained. Politically, the C.R.P.A. had now to convince constituent local authorities to similarly endorse the Plan. Indeed, this was vital since implementation of any roading proposal lay ultimately with the local authorities. Furthermore, the general public had also to be convinced. The C.R.P.A. had to "sell" the M.T.P. to Christchurch, a task which in itself was to prove difficult and time-consuming.

SELLING THE PLAN - AN OPPONENT EMERGES

Acceptance of the M.T.P. in principle and the publication of the Outline proposals in September of 1962, meant the C.R.P.A. effectively opened up the transport planning process to public scrutiny and debate. The resultant response was dominated by two major issues.

The first of the major objections against the Outline Plan was its lack of attention to public transport. The adopted plan had played down the role of the city's bus system to a minimum, whilst concentrating on private vehicle usage. However, the C.R.P.A. was able to counter this criticism of its Outline Plan by stating, in reply to such claims,

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12. Early reference to the urban renewal possibilities of a Christchurch transport plan were expressed by the N.R.B. in an article in The Press 28th August, 1957, p.16.

13. See Thompson (1973) pp.32-6.

that provisions for public transport were being left to the later detailed design stage. In any case, they continued, the bus service would benefit greatly from the improvement in terms of travel speed, the motorway system offered.[14]

The second group of objections directed against the Plan were, however, not so easily dismissed. They derived primarily from the one source - the City Planning Study Group (C.P.S.G.). This body was made up of a number of business and professional people whose self-appointed task was to examine the M.T.P. proposals.[15] They were soon to regard themselves as the virtual guardians of the Central City,[16] and in this capacity they conducted their own assessment of the traffic situation and the M.T.P., and produced their own alternative set of recommendations.

The C.P.S.G.'s alternative plan was presented in local newspapers in February 1963,[17] and was based on different planning beliefs than those of the Traffic and Transport Committee. The Group was, however, by no means anti-motorway. They announced their agreement in principle with the roading proposals for the suburban areas of the city and also the North-South bypass role for the motorways.[18] Where principally they differed was in the treatment of the Central City - between the four avenues. The C.P.S.G. called for a moderation of the plan's effects on the central "precinct", arguing for the removal of the M.T.P. motorway proposals from this area. Their scheme (see Figure 3.4) suggested the Northern motorway line should be moved to Fitzgerald Avenue, whilst the remaining three "avenues" (Bealey, Moorhouse and Deans) be converted to a six-lane ring road. From this the central precinct could be fed by a system of one-way collector

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14. M.T.P. Report No. 66 (April 1964) pp.29-30. (See also C.R.P.A. (1962) p.35.)
15. The Press 16th February 1963, p.10.
16. The Group was transformed in the later 1960's into the Civic Trust.
17. The Press 15th February, 1963, p.14.
18. Ibid.

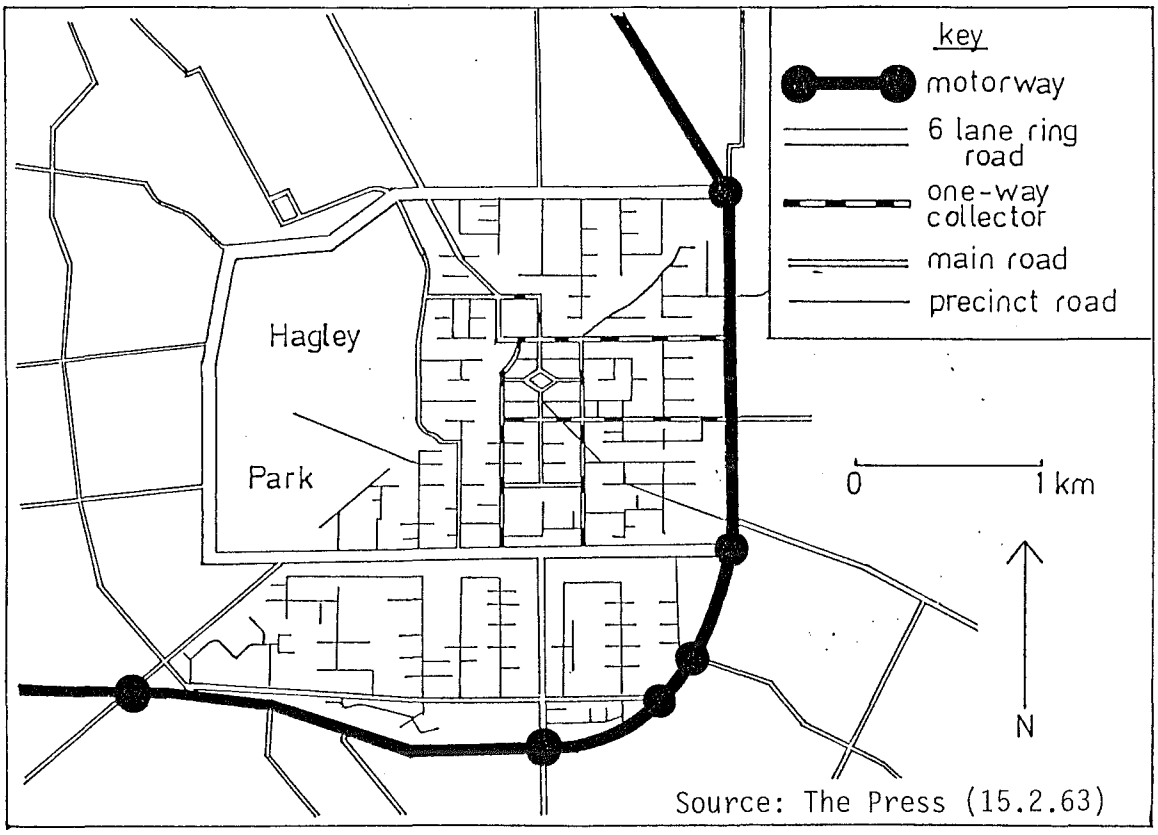

Figure 3.4 C.P.S.G. alternative transport plan

roads, whilst remaining precinct streets should be turned in cul-de-sac's as a means of discouraging unnecessary traffic movement. The C.P.S.G.'s specific conern was the Central City however it also went further to reject the draft M.T.P. on the grounds of its lack of planning integration. Whilst the Traffic and Transport Committee had expressed concern for modal integration, the C.P.S.G. claimed the result was a plan integrated only as far as traffic was concerned. What was required was a complete Town Plan in which aspects such as land-use, environment and asthetics were fully considered. As they themselves stated:

> "The Group would like to see the master traffic plan developed more toward the idea of neighbourhood precincts...."[19]

The draft M.T.P. as it stood was an isolated project which might itself endanger a potential town plan by its narrow outlook.[20]

By the very fact of their ardent opposition and the production of their alternative plan, the Group had illustrated vividly - to the public and local politicians alike - that a choice still existed. The implementation of the C.R.P.A.'s proposals for the M.T.P. was not a forgone conclusion.

Summary

In Chapter 2 the evolution of the decision situation was outlined. This chapter has concentrated on how this decision situation was further developed toward the stage of final, Plan-solution production.

The Outline Plan accepted in principle by the C.R.P.A. in September was intended as the means to 'solve' the predicted future

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19. The Press 15th February, 1963, p.14.

20. Eng, (1967) p.78, reporting C.P.S.G. opinions.

traffic problem facing Christchurch, before it even arose. The M.T.P. was touted as the 'best' option and implementation of its proposals seemed at hand.

It was, however, at this stage this a possible opponent, in the guize of an alternative (C.P.S.G.) motorway plan appeared. This alternative plan is important in that it initiated a new stage for the planning process - that of political and public acceptance, it revived the attention on what was the best solution. In activating public opinion the C.P.S.G. proved that implementation of a plan was not necessarily a natural progression through the planning process.

In Chapter 4, this study goes on to examine firstly the development of the debate over the M.T.P. and the effect this debate had on the Plan and planning process. How both changed in the period after 1962 is examined.

CHAPTER 4

CHAPTER 4

THE CHANGING ENVIRONMENT OF PLANNING

The controversy surrounding the alternative alignments for the Master Transportation Plan's primary road network was important in two planning senses. Not only had public opinion on the merits of the Plan been polarised, but the continuing debate on the motorway location issue served to slow down, if not actually stall, the process of planning itself. The politiking which was to develop rapidly during the years 1963 and 1964 forced the Regional Authority into the position of having to 'sell' its proposals to the local councils and general public alike. Opposition to the Plan was founded in arguments of largely a non-traffic nature. Whilst this controversy continued to take precedence, new developments within the realm of urban transport planning itself were already beginning to crystalize - events which were to affect the nature of both the facility location issue and the broader transport plan.

ACCEPTANCE OF THE PLAN: THE CITY COUNCIL BAULKS

The M.T.P. had been accepted in outline form by the full Regional Authority at a meeting in September 1962. This development was almost devoid of practical significance being merely a rubber-stamping of the proposal before its submission to local councils. As they existed, the outline proposals had no legal standing and did not even purport to show the extent of properties affected or monetary costs. Furthermore, up to this point the Regional Authority had failed to draw any firm commitment from the local roading authorities and the N.R.B. as to whether the Plan was completely suitable to them.

The dichotomy created in Christchurch metropolitan planning following the adoption of regional planning (1955) by its very nature necessitated some form of local council approval of any regional plan. This was a direct result of the fact that the resources required for implementation of any such proposals were under local authority control. What was required was a degree of constituent authority consensus for the acceptance of a plan such as the proposed M.T.P. As the 1953 Town and Country Planning legislation inferred, plan implementation was vested firmly at the District level, the Regional Scheme could act merely as a guide. The needed endorsement of the M.T.P. had therefore presented the Regional Authority with an opportunity to popularise its planned solution to traffic needs amongst an increasingly curious public. The opportunity was however, seized by a more energetic opposition.

As it was, approval from five of the six constituent local councils was easily obtained - two (Heathcote and Riccarton) had been completely unaffected by the most problematic motorway proposals. From the outset the major decision of importance was to be that of the preponderant council - Christchurch City - and it was to this body that the C.P.S.G. took its case against the Plan.

Eng (1967) notes that the Planning Study Group had become united to a

> "...minimal intention of forcing the (Regional) Authority to reconsider the Plan, to re-think the entire problem in a broader context."[1]

This 'broader context' was expected to involve the complete integration of land-use and transport planning to form an all-embracing central city plan.[2] They believed they could achieve this by provoking the widest possible debate on the M.T.P. issue in the City Council forum.[3]

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1. Eng (1967) p.79.
2. Christchurch Press, 15th February 1963, p.14.
3. Eng (1967) p.88.

The local authority councils had been asked to view the Outline M.T.P. as a complete proposal. The C.P.S.G. were prepared instead to focus opposition at specific points of concern within the whole plan.

The Christchurch City Council (C.C.C.) had given tentative approval to the principle of the Outline Plan as early as February 1963.[4] Concern with various aspects within the Plan, notably the violation of Hagley Park, had however, served to preclude formal acceptance. Councillors were concerned that such an acceptance decision should not prejudice any opportunity for later opposition when the question of detailed plan considerations arose.

It is in this latter respect that the City Council itself began to anticipate problems of detail when the broader view of the Plan as a whole was perhaps necessary. The threat to Hagley Park became a pre-occupation, the question of the appropriateness of the M.T.P. proposals as a whole became secondary. The Regional Authority, realising the City Council's dilemma, sought to amend the Plan's treatment of the Park. In an obvious political move, the April 1964 Plan amendment proposed the use of Harper Avenue for the needed Fendalton motorway and an angled link to the Salisbury Street central motorway (Figure 4.1). By this stage however, the damage had been already done and the move failed to appease the Plan's opponents. Within the C.C.C. itself such virulent opposition was bearing fruit. July 1964 saw the Council's own Reserve Committee adopting the C.P.S.G.'s use of the four city belts as a motorway alternative to be put forward for specific council consideration.[5]

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4. See C.C.C. comments on outline proposals, M.T.P. Report No.66 (February 1964) p.10.

5. Sharrocks (1980) p.106.

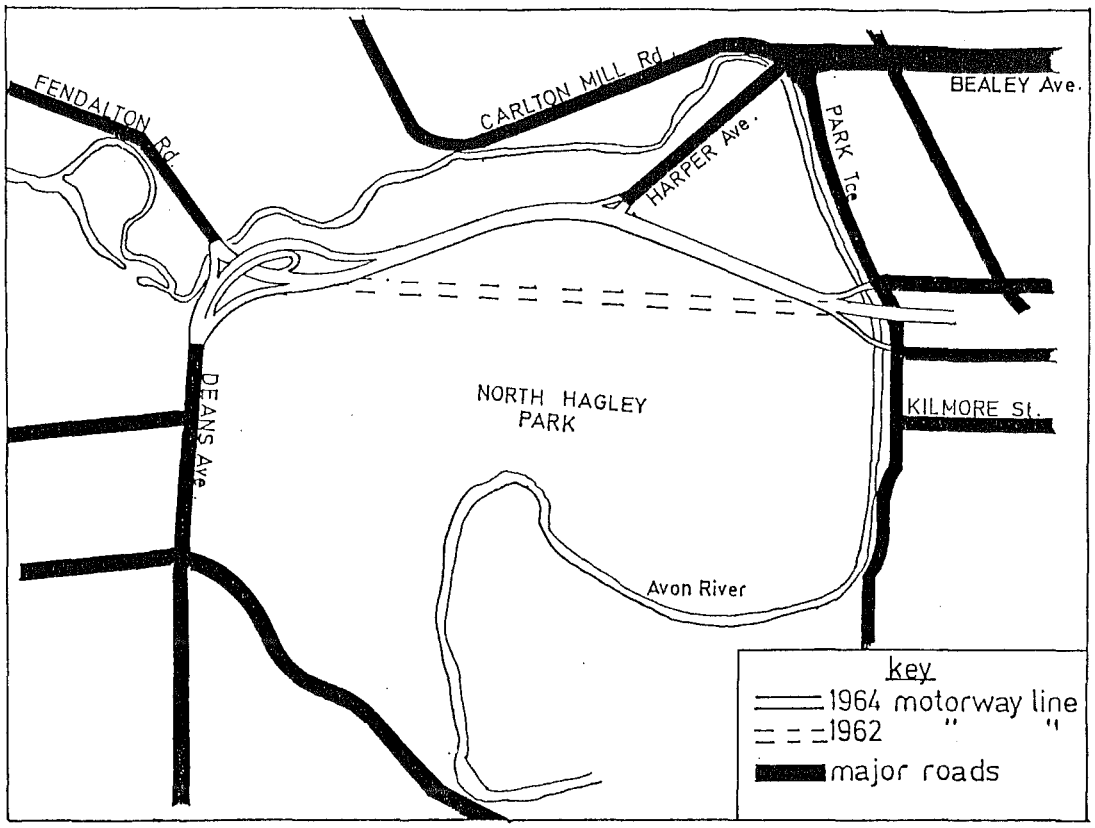

Figure 4.1 April 1964 Amendment to the motorway across Hagley Park

Following a series of Council inspired public forums, and with newspaper comment running against the Plan, the strong possibility existed that the Master Transportation Plan would be rejected by the C.C.C. The C.P.S.G. played upon this situation. It proposed alternatives to the Rolleston Avenue distributor to the Southern Outlet from the City Centre.[6] The suggested alternative of using Montreal Street flew in the face of the Group's own philosophy of planning Central Precincts where cars were not left to dominate the environment (the Montreal Street proposal cut through its 'river precinct'). The suggestion was however, floated to add further to mounting pressure.[7]

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6. Christchurch Press, 21 August 1964.

7. C.P.S.G. admission in Eng (1967) p.89.

As it was, the time factor was clearly on the side of the C.P.S.G. and those calling for a planning reconsideration. The political climate was unfavourable meaning a delay in the process of early, detailed development of the Outline Plan. The planning climate was also experiencing the winds of change. Urban transport planning methodologies were being seriously questioned in a British publication "Traffic in Towns" (1963). Coming as it did in the middle of the Christchurch debate, and bringing a further conceptual input to post-war traffic planning, this document was to provide further ammunition for those concerned with the M.T.P.'s basic planning principles.

TRAFFIC IN TOWNS: BUCHANANISM STATED

The report on "Traffic in Towns" was the product of a British Ministry of Transport working party charged with investigating

> "...the long term development of roads and traffic in urban areas and their influence on the urban environment."[8]

The working party, led by Colin Buchanan (hence the Reports more popular title as the "Buchanan" Report) identified the prime issue facing traffic planning as being how to commit resources to the re-modelling of urban areas for the accommodation of different levels of vehicular access.[9] "Traffic in Towns" was intended to be a long-term aid to policy-makers, and the approach it adopted was based on design considerations. As such, the Report did not come out in wholesale opposition to large scale roading proposals. Instead a change in emphasis for the urban transport planning process was advocated with the highlighting of the importance of the urban environmental factor. The Report had expressed concern at a fall in environmental standards relative to increasing accessibility

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8. Great Britain Ministry of Transport (1963) p.7.
9. Starkie, D. The Motorway Age (1982) p.37.

and proposed a "bottom-up" planning solution through integrated town plans. "Traffic architecture" - or "The art or science of arranging buildings for efficient circulation and good environment"[10] - was the means advocated to meet the divergent needs of movement and environment. Buchanan himself adopted the analogy of the internal workings of a large building to explain these concepts.[11] In both situations occupiable spaces had to be arranged in relation to the corridors of circulation. The environmental area (urban "room") formed the foundation of the proposed planning technique. The function of the urban traffic network was defined as servicing environmental areas - areas where safety and aesthetic values were held paramount and, while skilful applications of traffic architecture might raise the acceptable level of traffic, a maximum ceiling or absolute limit still existed.

The "acceptable" environmental standard also dictated the size of the environmental area.

> "...it is desirable to subordinate traffic movement to the environment and exclude entirely the cross-filtration of extraneous traffic."[12]

The resultant cellular structure of the basic planning units (environmental areas) could dictate the form of the canalised road network (Figure 4.2). The technique was bottom-up in the sense that the network of routes was subordinate to local needs.

This change of focus for urban transport planning in general was important in that it re-emphasised the true advantage of canalisation. Two factors were deemed necessary for the effective application of the canalisation technique when it was first introduced in the 1940's.[13]

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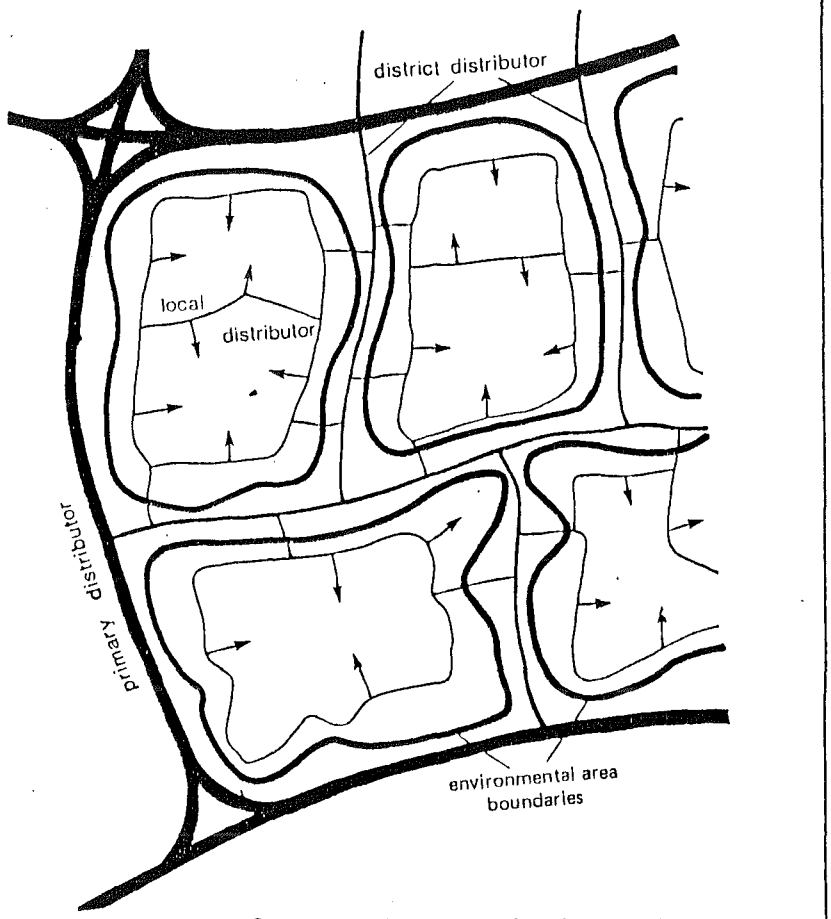
10. Buchanan in Williams (1961) p.8.
11. Ibid, pp.5-6.
12. Buchanan and Partners (1966) p.16.
13. Tripp (1942) - One of the more notable applications of canalisation was in Abercrombie's "County of London Plan". (Abercrombie, 1943).



Source: Great Britain Ministry of Transport (1963) p.44.

Figure 4.2 The principle of a road hierarchy and environmental areas

One, the positive attractant force, had long been adopted in most traffic plans (e.g. motorway arterial routes in Christchurch) but the second was a less recognised option. This involved a negative or repulsive force to direct traffic onto the hierarchical network. The practical application of these concepts all-too-often ignored the need for the latter force. In this light Hart (1976) has noted

> "...the Buchanan approach could be viewed less as a new departure and more as a logical extension of long dominant planning principles..."[14]

In other senses also the Buchanan technique expressed in "Traffic in Towns" might be regarded as traditionalist planning. The conception of the future motorised city and attempts to avoid congestion

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14. Hart, D.A. (1976) p.93.

related 'strangulation' of old urban forms was one aspect. The Buchanan technique advocated protection of existing urban forms in face of the alternative of auto-inspired sprawl. "Traffic in Towns" recognised that the traffic problem was only a symptom of a greater urban ill - the outdated structure of most cities. As such the Report was not limited to a solely traffic orientated solution, advocating the integration of the varied elements of town planning instead. The dispersive influence of motor vehicles had to be controlled through a package of urban planning policies. The Report therefore proclaimed the virtues of Green Belts, and Development Controls to keep urban areas compact; new towns to syphon off excess populations;[15] maintenance of a central focal point for the concentration of urban activities and the environmental protection of such areas;[16] and the establishment of large-scale governmental bodies to undertake such a comprehensive planning task.[17] With the articulation of these planning principles the Buchanan approach had extended the scope of the urban transport planning process. Urban transport planning was freed from its past over-emphasis on purely traffic based answers, and set to incorporate broader considerations.

BUCHANANISM IN CHRISTCHURCH

As outlined above (pp.51-55) the political wrangling accompanying the acceptance of the M.T.P. in principle was long and involved. It had, however, also occurred at a vital time with the coming to prominence of the Buchanan Report. With this latter development the Regional Authority was again faced with the prospect of justifying its

15. Great Britain Ministry of Transport (1963) pp.30-1 and 165.
16. Ibid, pp.165-6 and p.197.
17. Ibid, p.198.

traffic proposals, but this time against the Buchananist philosophy.

With the C.P.S.G. managing to obtain a copy of "Traffic in Towns" in early 1964 and claiming that it endorsed their own objection to the local Plan, the scene became set for yet a further attack on the M.T.P. This attack was to be based on ideas expressed in Traffic in Towns and particularly its feature against "letting traffic dominate". The Buchanan Report was viewed by the Planning Study Group as being

> "...the most significant and valid criticism ever brought against the Master Transportation Plan."[18]

Northcroft (now in private practice in the city having left the Regional Planning Authority) had expressed the M.T.P.'s outdated planning philosophy in a local newspaper article in April 1964.[19] She stated that the motorway design of the Outline Plan had been done in such a manner as to facilitate the development of precincts. These precincts had awaited determination in the detailed design stage of the planning process. This order of procedure was set in apparent odds to the Buchanan school, the philosophy which the C.P.S.G. now proclaimed. The Regional Authority's conception was, in the C.P.S.G. outlook, a reversal of bottom-up planning, and precinct planning could not await later development but must rather precede it.

By late 1964 the M.T.P. debate at local authority level had again reached a crucial stage. The C.C.C. was forced to reconsider its approval in principle after the Reserve Committee's decision in mid 1964 (see above p. 53). With the Buchanan report adding to the pressure for council re-consideration, a Special Council Meeting was set for November, 1964.

The issue confrontong Councillors at this meeting was approval of all elements of the M.T.P. In this sense it was a new departure.

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18. Eng (1967) p.108.
19. Christchurch "Star".

The past consideration had been with the principle of the Plan, now all matters were at issue. Eng (1967) also notes that the meeting marked another departure in that outright politicking, entered the debate. The council's Citizen Party majority advocated the acceptance of the Plan as virtual "government policy".[20] The Labour Party minority in complete contrast backed the C.P.S.G.'s option of a six lane ring road around the Avenues, claiming it to be up to date (in light of Buchananism) and less expensive. Voting along party lines was enforced, the Plan was again accepted but Plan opponents later succeeded in the passage of a resolution inviting the advice of an overseas consultant.[21] The resolution was drafted with reference to

> "...maximum possible needs of traffic and the welfare of the commercial community while preserving and enhancing good environment,"[22]

clearly the resolution was C.P.S.G. inspired and aimed at a particular consultant: urban transport planning's man-of-the moment Colin Buchanan. He had been marked down as arbiter and whilst awaiting his judgement, the debate was stalled. Opposing sides apparently agreed to accept his findings, Buchanan was

> "The expert beyond which there was no appeal."[23]

Judgement on the Plan proposals could not be avoided - the fate of the Transport Plan was in the balance.

The resolution had clearly been an open invitation for Buchanan to apply the "Traffic in Towns" methodology to the Christchurch situation. In his report to the Council[24] presented in January 1966, Buchanan managed to tread a fine path between acceptance and outright

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20. Eng, 1967, p.129.
21. This was achieved by winning over Citizen's Councillor P.J. Skellerup who was also Chairman of the Council's Reserves Committee.
22. Buchanan, 1967, p.2.
23. Eng, op cit, p.147.
24. Buchanan and Partners (1966).

rejection of the M.T.P. His basic criticism mirrored that of the C.P.S.G. - the M.T.P. was only part of a limited regional scheme. This counted against the acceptance of the Plan proposals in isolation from a complete Town or Regional Plan. As might have been expected, Buchanan further reiterated his bottom-up planning philosophy, explaining that a complete town plan would delineate environmental areas. Since this had been lacking in the M.T.P. the relationship between urban rooms and corridors was at best, suspect. This was indeed a scathing criticism of the Plan.

Buchanan however went further, and analysed the options proposed for the city's road network. This seems to be somewhat of an abandonment of this own planning method. Whilst advocating a comprehensive view of town planning, his analysis concentrated on traffic proposals and, in specific spatial terms, those of the central city area. This reflects his task of adjudicating on issues of design from a Plan which was in Outline form only. Buchanan's philosophy had been geared to the planning process not the assessment of individual schemes.

The further complication of political elements made Buchanan's task even more difficult and his adjudication in reality settled little. His definitive approval of the motorway's concept and the siting of the central motorway sections, was however, of major concern for the C.C.C. Acceptance of these by Buchanan in his report on the M.T.P. meant approval from the Council could follow - but the higher-level argument over the planning process remained.[25]

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25. Buchanan and Partners (1966) p.54.

MOVES TO POLICY-PLANNING - THE REGIONAL MASTER PLAN

In most respects it was the Regional Planning Authority itself which was to adopt a change of heart in its planning approach, and by doing so resolve some of the problems raised in the "high" planning argument against the M.T.P.

Recognition of the need for change in the Authority's planning principles were first expressed in late 1962, with the arrival of C. Barclay Millar to the position of Director of Planning.[26] This change of personnel was followed soon after by a review of the Regional planning position.[27] This set out the nature of past work the Authority had undertaken and its own conception of its planning role. The report proposed a broader base for the Authority's work and an extension of Regional planning into a wider range of areas. Whereas previously the Authority had concentrated on separate elements of a Regional Scheme (rural fringe and communications) the suggested modified approach sought a more complete picture.

This change in emphasis was a reflection of developments within the planning profession. Barclay Millar saw the existing planning situation as being of limited scope.[28] The more holistic approach to the development of the Regional Scheme came with the preparation of the Regional Master Plan.[29] This represented not only the opportunity for a broadening of the regional planning process but also the adoption of planning through expressed policy. In the past the Authority conception of policy had included the means advocated to reach an end (example, the M.T.P. as regional policy in 1962 was the programme for a suggested solution). In the new concept policy

26. Barclay Millar replaced Nancy Northcroft as Regional Planner in December 1962.
27. C.R.P.A. Planning Report No. 62 (February 1963).
28. Barclay Millar pers.comm. (1985).
29. C.R.P.A. Planning Report No.62 (February 1963).

was expressed as a clearly defined objective or end-state; detail of means and methods of achieving this were not incorporated as policy but rather were policy tools.[30]

The revision of the Operative Regional Scheme (1968) attempted to cement in place this subtle conceptual evolution.[31] Both the need for an expressed written policy and the need for continued regional planning made up the first two Master Plan policy statements. The policy package (which was later accepted in full by the Regional Authority) also included such aspects as provision of recreational space for the future, the need to control urban form, examination of restraints on urbanization and the determination of urban form in face of future urban development and areal expansion.[32]

The specific reference to the urban transport component came however, in policy number three of the package. This expressed the need to inter-relate communications and urban development throughout the Regional area. The objective of this policy involved the maintenance of minimum levels of traffic service throughout the region in the long-term planning situation. For this the level of service determined by the Master Transportation Plan (Figure 4.3) was adopted.[33] A further feature noted in the communications policy adopted, was the incorporation of proposals for progressive revision of any previously accepted Plan. As the policy report to the Authority noted

> "...it is obviously necessary to continue to re-examine all possible modes of transport likely to arise, and all potential change in generation of traffic."[34]

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30. Barclay Millar pers.comm. (1985).

31. C.R.P.A. (1968) p.1.

32. This was in many senses a recognition of the earlier "Traffic in Towns' call.

33. C.R.P.A., M.T.P. Report No.185, p.3.

34. C.R.P.A., M.T.P. Report No. 92, p.1.

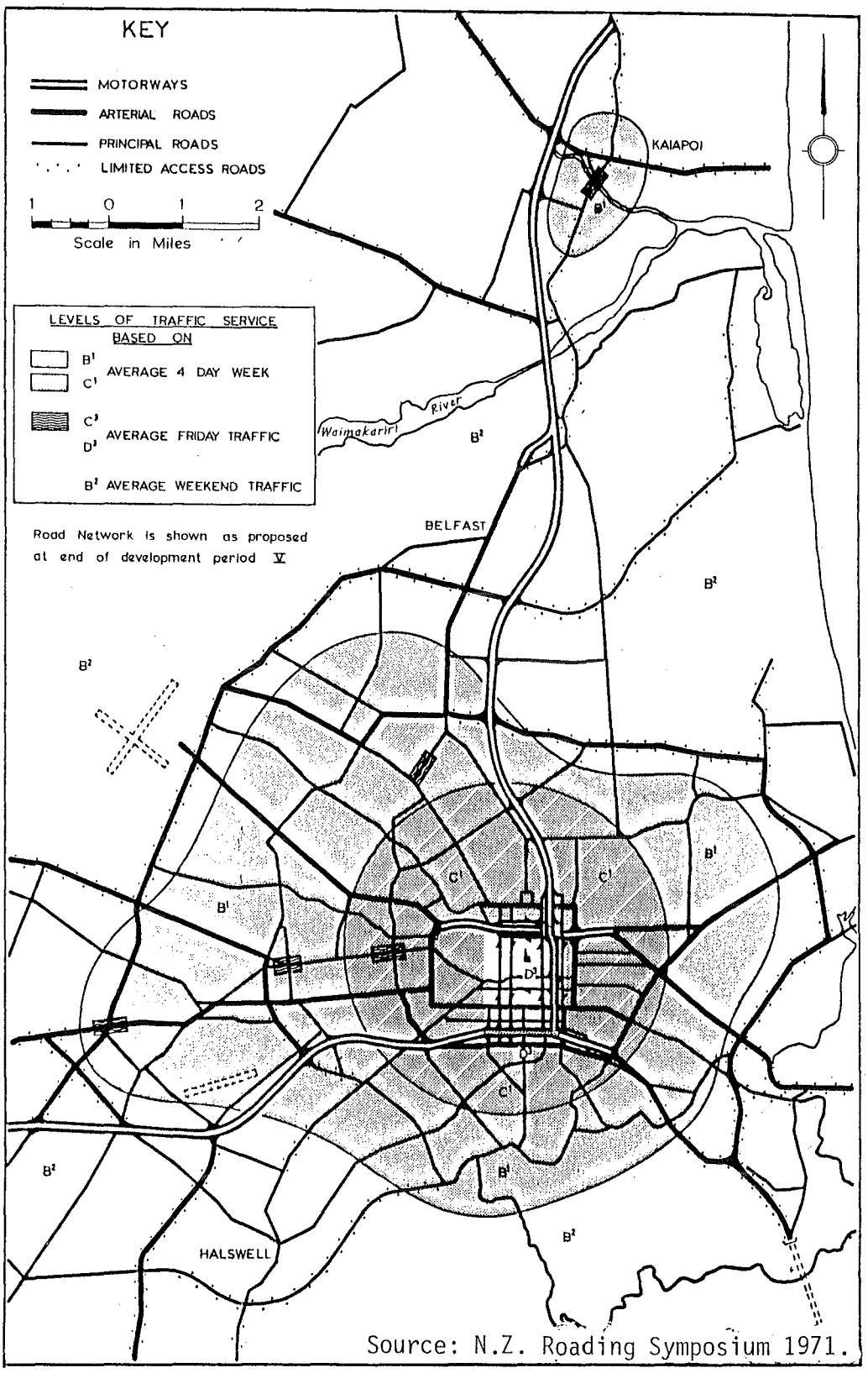

Figure 4.3 Levels of Traffic Service

THE SECOND TRANSPORT STUDY BEGINS

Adoption of a continuing process of planning for future needs had long been of concern to the Regional Authority (note, for example, the call for a plan solution which could be extended to meet needs beyond the original 1980 planning period - see above page 34). Added to this concern, the need for planning flexibility in the face of possible changes in forecast trends was also of paramount importance for any review. It was in this light that the review policy of the Master Plan was finally implemented. The October 1968 "Report on Continuing work of Regional Traffic Survey Analysis and Planning" had announced the need for a re-survey of the traffic situation.[35] This was itself justified in regard to the age of the original survey data (now 10 years old and clearly obsolete) and with reference to advances in traffic planning which were eroding the assumptions upon which the original Plan had been based.

The Second Transport Study was instituted as a review of the earlier M.T.P. data. It was not in itself a new approach to the city's transport problem,[36] but adopted a similar system of surveys and procedures. Three basic objectives had been established for the Study. Firstly, it was to review basic assumptions on development trends which had been incorporated in the 1959 survey. Secondly, the Study was charged with determining alterations to the 1962 M.T.P. in the light of existing and future Regional development decisions. Finally, the Study had to look forward and examine future development policy options for the Christchurch Region and their transport implications.[37]

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35. C.R.P.A., M.T.P. Report No. 150, p.2.
36. M.T.P. Report No. 155 (April 1969) p.1.
37. Ibid.

The review was intended to correct the deficiencies of the earlier surveys and Outline Plan which had been exposed in the years since their completion. In outlining the nature of the Second Study, Barclay Millar was himself to state

> "In the Christchurch case it is suspected that it will not be necessary to alter significantly the present development proposals in the region. However, there are less radical planning decisions such as the rate of implementation and priorities, variations in land-use densities, to be considered and some detailed consideration could well be given to the impact of revitalised public transport policies."[38]

At its outset therefore the study looked toward both the more distant planning horizons on the one hand and the issue of plan implementation on the other.

This latter focus for the review may be considered to have derived in no small part, from the delays in implementing the Original Plan - due to the failure of the Authority to gain immediate acceptance in principle and subsequent financial difficulties. With this factor highlighted, the Authority had decided that the 1980 planning horizon had become unrealistic to meet. Consequently, the period for implementation had been stretched a further five years (to 1985).[39] Whilst this move would reduce somewhat the predicted benefits gained from congestion free travel (by allowing congestion to build-up in some areas), it was necessary and justified in that it spread the burden of financial demands of the roading programme over a longer period.[40] The change in planning horizon, had however, not affected the process of detailed design planning. By August 1968 this component of the planning process was largely completed

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38. M.T.P. Report No. 155 (April 1969) p.2.

39. M.T.P. Report No. 115 (December 1967) p.1.

40. Ibid.

enabling the local roading authorities and N.R.B. to approve a twenty year roading programme (August 1968).

Initial survey reports from the Second Study were soon available, revealing that traffic congestion was spreading from the central core into the suburban extremities of the radial road network (Figure 4.4).

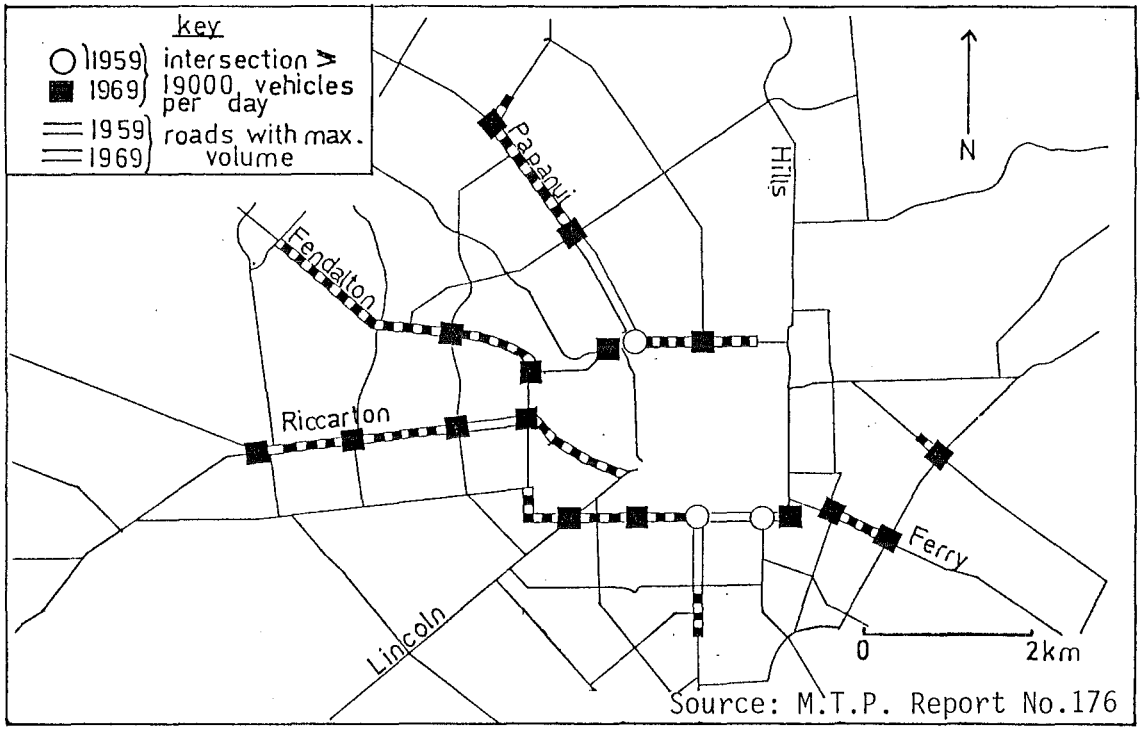

Figure 4.4 Spread of Congestion on major radials 1959-1969.

These results were however of further interest as they indicated that traffic was now diverting away from the city centre by adopting ring movements rather than the direct radial approach.[41] A further analysis of these results led to the conclusion that

> "...the community now accepts a level of service far below that envisaged (in the 1962 Plan) and has now no chance of regaining the past ease of movement."[42]

Financial Matters and a City Council Change of Heart

The financial commitment to the M.T.P. was still foundering. The Plan rested on local authority willingness and ability to complete construction to due dates. With the incorporation of a flexible three year rolling plan period for more immediate determination of construction priorities, the programme was deemed capable of meeting planning uncertainties.

In August 1966, Barclay Millar had emphasised the need to implement the M.T.P. on the basis of steady rates of annual expenditure on both roading and property acquisition.

> "Should unnecessary congestion occur in any part of the Christchurch region it will be because road authorities have failed (either in securing finance or in the determining of a policy in relation to priority and construction), to progressively effect the work and implement the Plan."[43] (emphasis added)

Later, in December the following year, a further report was released which provided for five stages of implementation.[44] The first of these "development periods" involved works programmed for completion in 1970, with very little primary route construction. The second programmed period (1971-75) was to provide the first expanses of urban motorway, area wide traffic signal control and one-way streets for the

41. M.T.P. Report No. 170 (October 1970) p.2.
42. M.T.P. Report No. 176 (August 1970) p.10.
43. M.T.P. Report No. 89 (August 1966) p.2.
44. M.T.P. Report No. 111 (December 1967)

central city (Figure 4.5). Period III (1976-80) involved the construction of the St. Albans section of the northern motorway, the connection between northern and southern routes at Waltham Road and a number of lesser works. Beyond this stage, two further periods were programmed. These (Period IV to 1985 and Period V, 1986 and beyond) would see the completion of the total picture, they however differed from the earlier periods in that these proposals were more tentative. This report was an attempt at realistic development of the M.T.P., (and was incorporated later in the 1971 Regional Scheme).

> "The dates shown indicate the years by which works must be completed to ensure a satisfactory standard of traffic service."[45]

Such a principle was however not to be adhered to. Once again the failure of the Regional Authority to gain full agreement - this time on the establishment of a fund for advance purchase of needed property - in combination with a less than required commitment to the construction programme, meant only one-third of the programmed Period I works were completed by 1969. The commitment at M.T.P. funds to other roading projects by a number of authorities was cited in explanation.[46] This situation was further complicated by cost inflation. By 1970 whilst some ground had been regained, principal works were still 25% behind schedule. The Authority was now forced to defer some of its planned improvements until more funds became available.[47]

On the political front however, the will to continue to implement the roading programme wavered further. During Period I of the programme (1967-70), the Municipal local authorities had largely maintained their expenditure input to implementing the Plan.[48] This commitment from the

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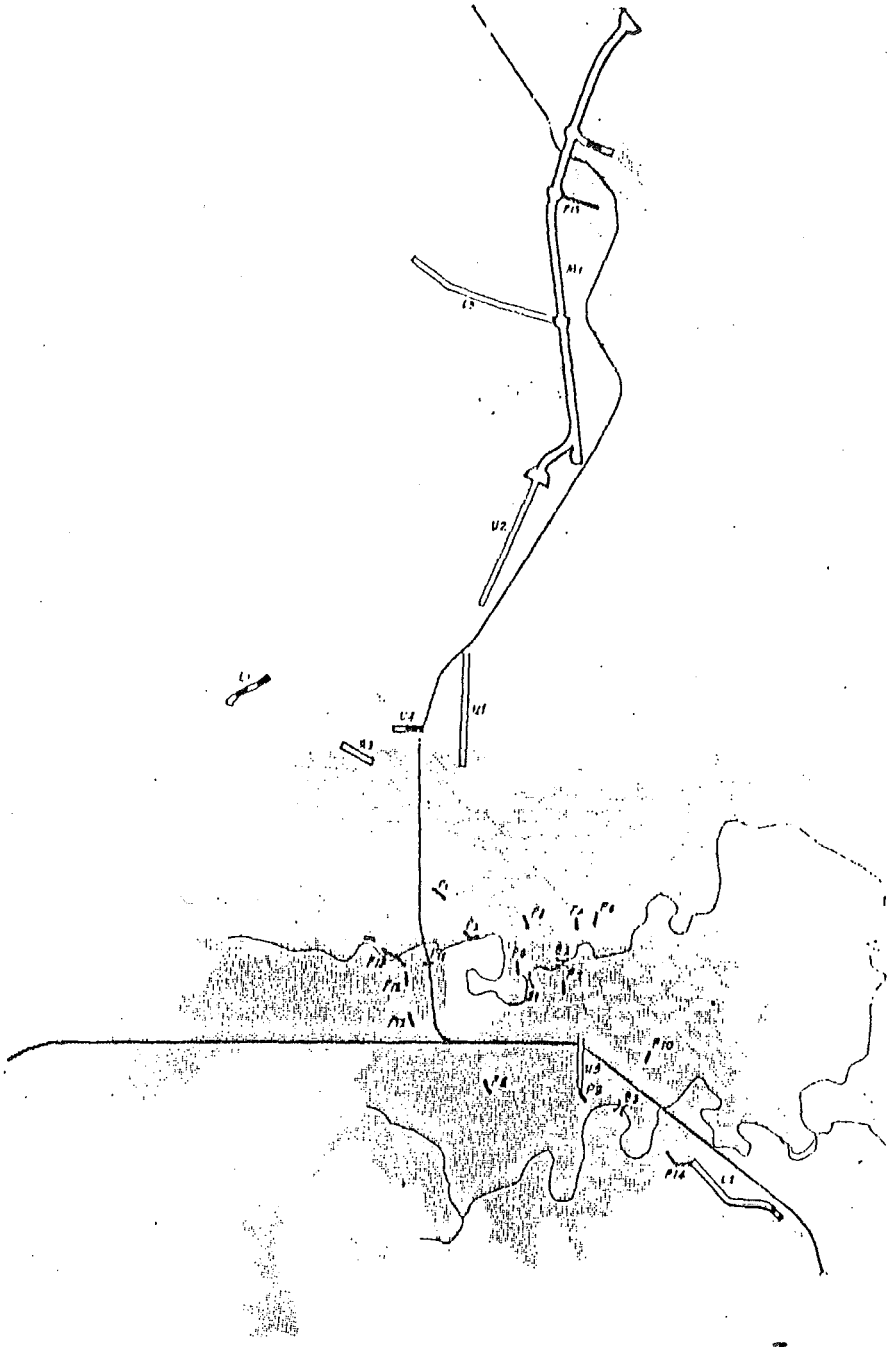
45. M.T.P. Report No. 111 (December 1967) p.5.
46. M.T.P. Report No. 181 (February 1971) p.3.
47. Ibid.
48. Ibid, p.1.



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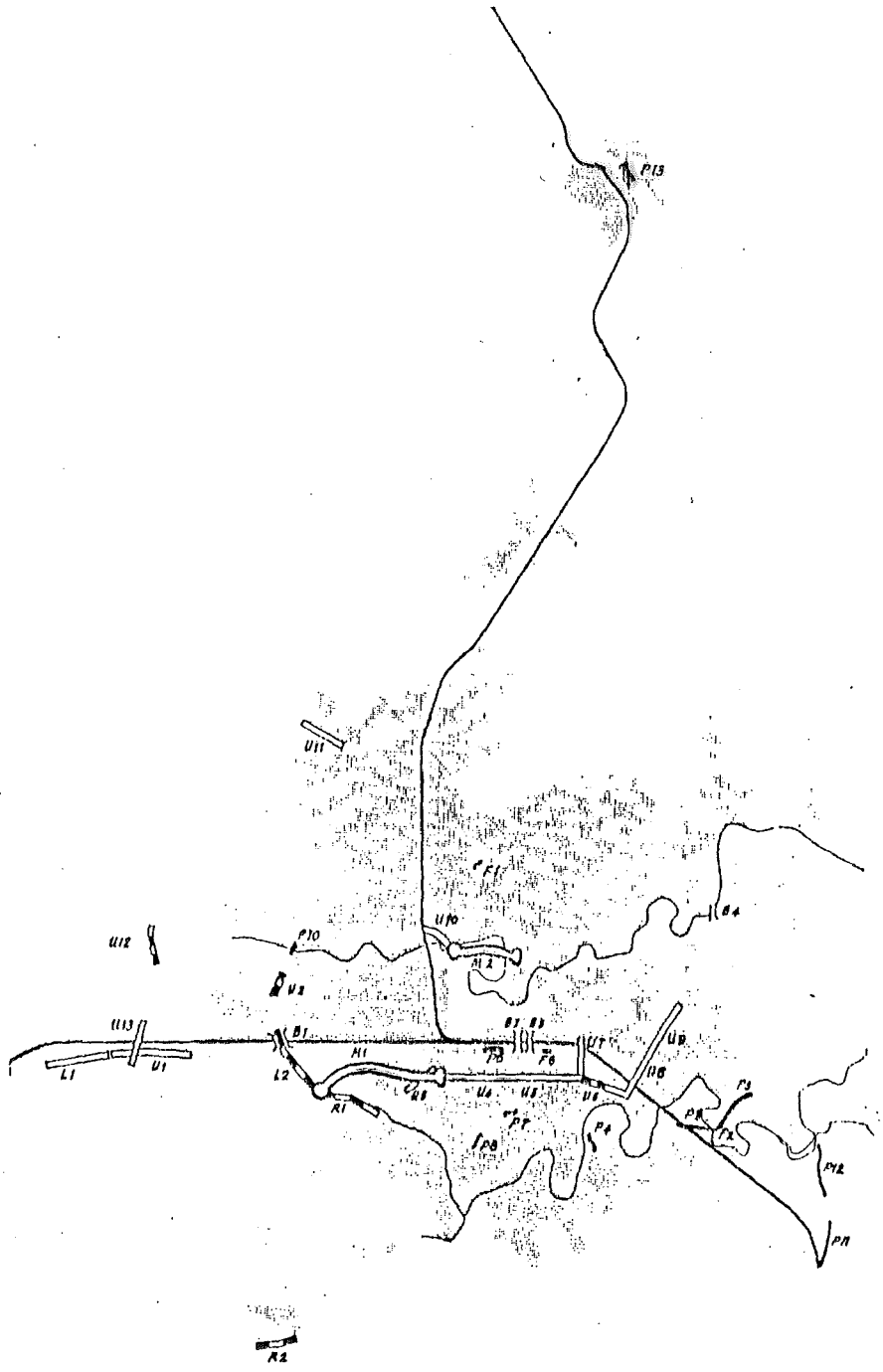
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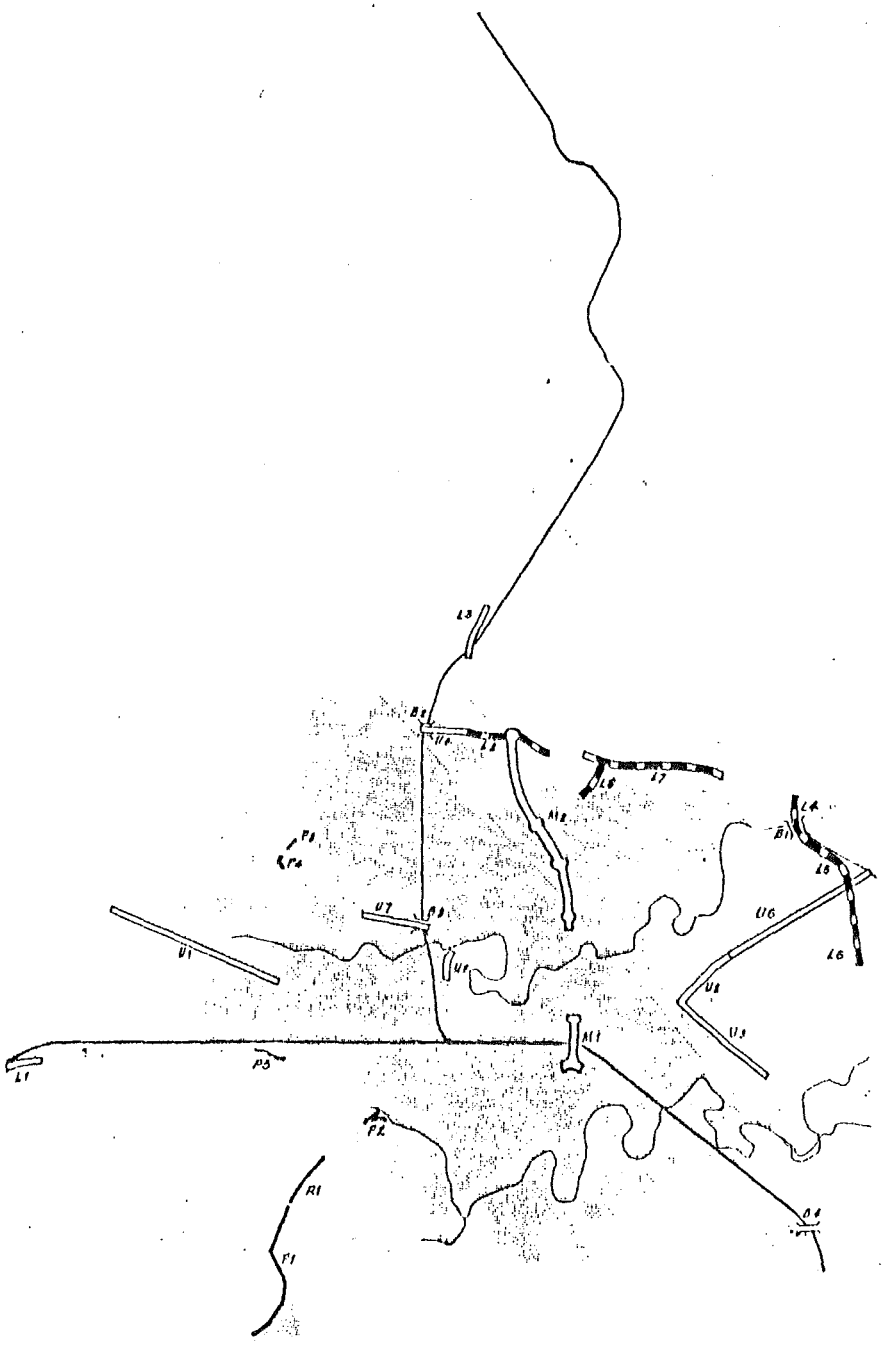
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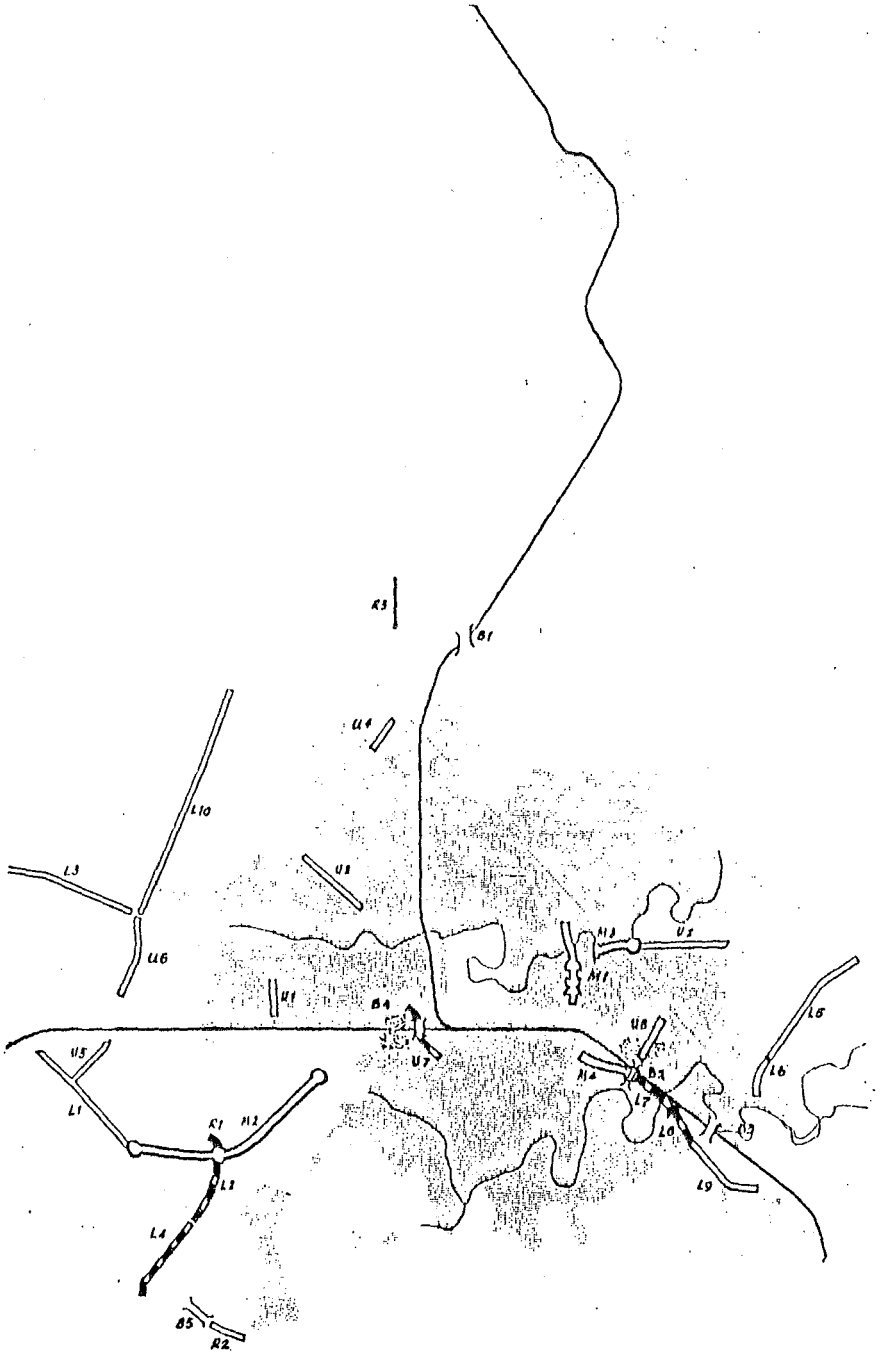
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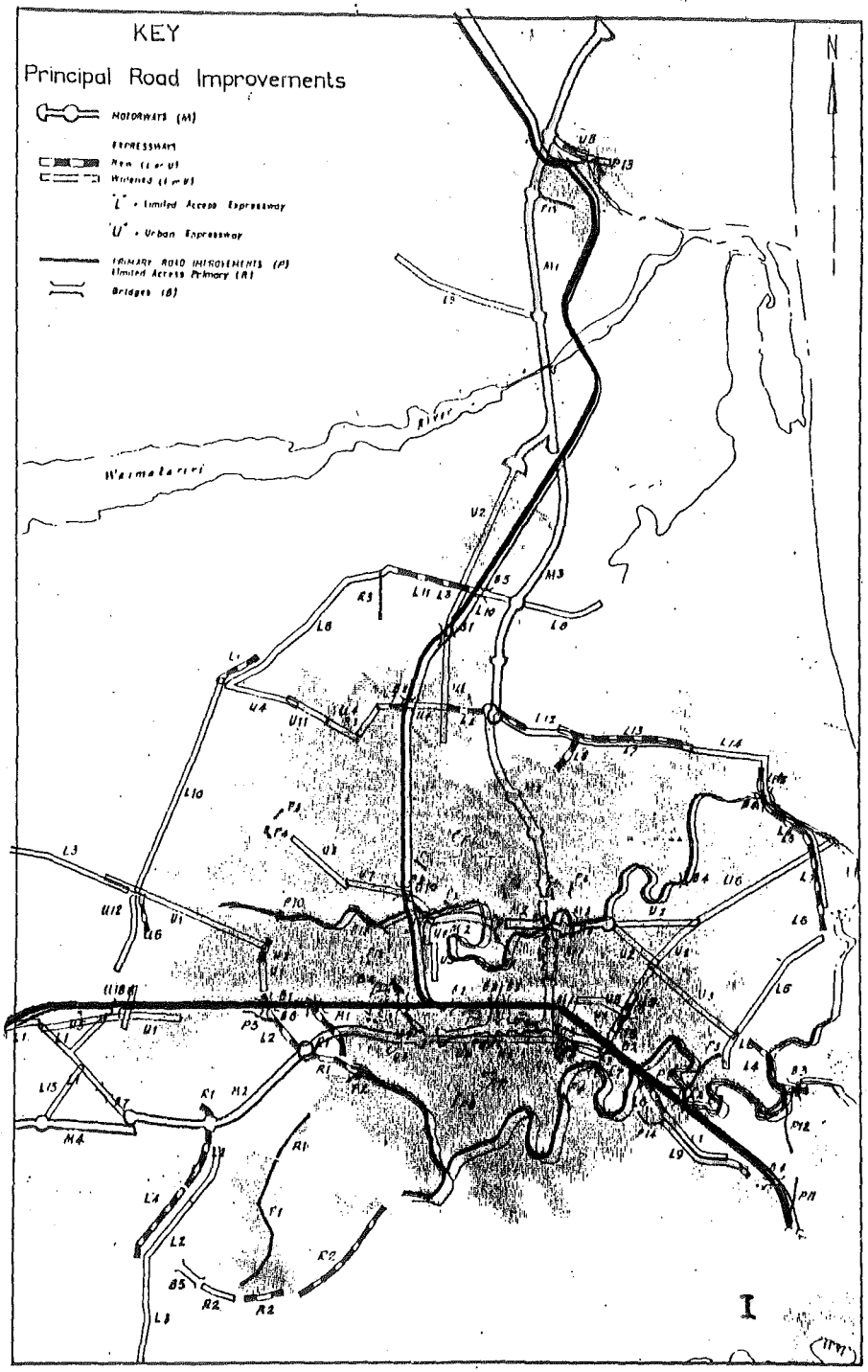
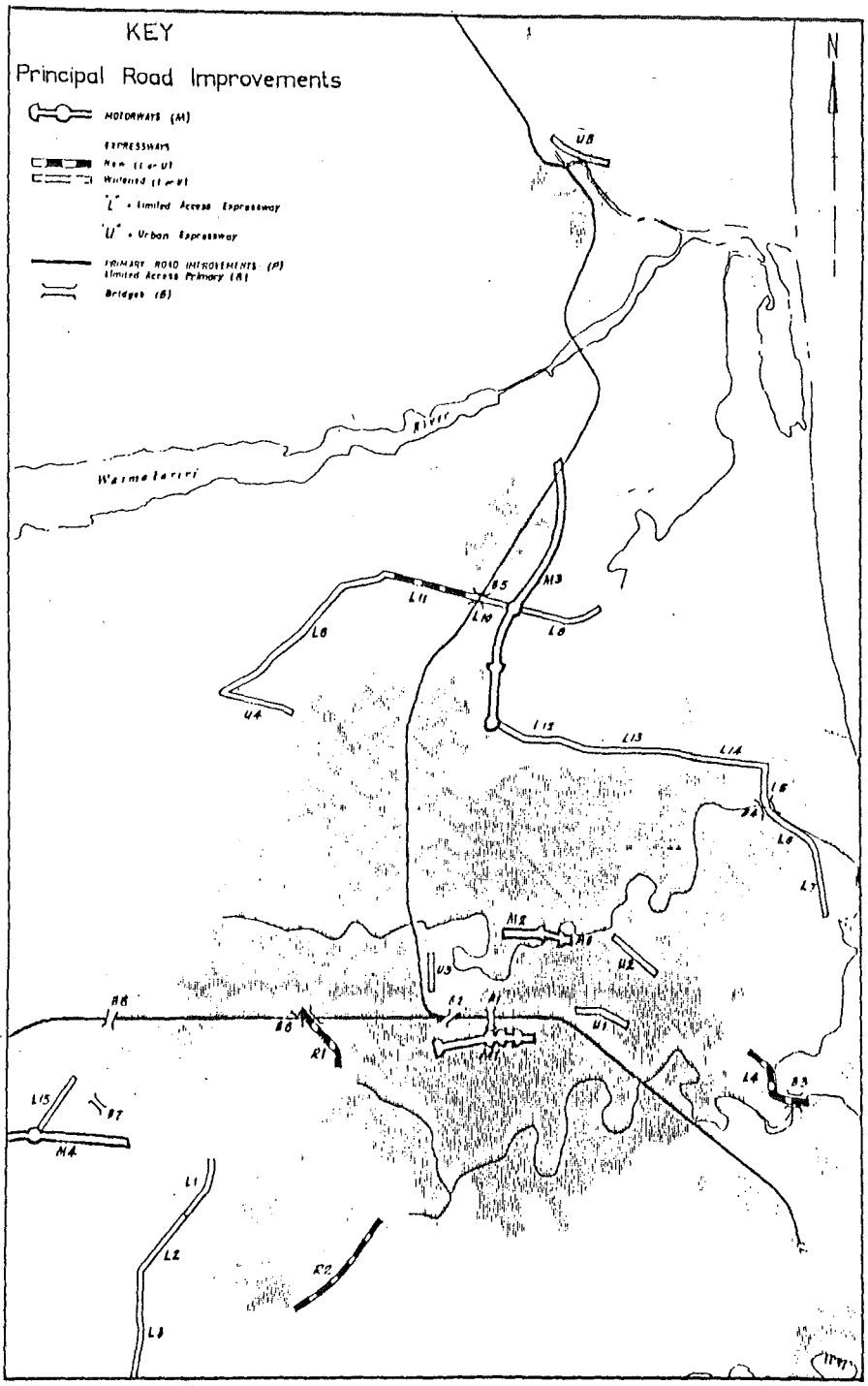


Source: M.T.P. Report No.111 (Dec.1967)

Figure 4.5 Programme of principal road works - Period I to V



Source: M.T.P. Report No.111 (Dec.1967)

Figure 4.5 Programme of principal road works - Period I to V

major urban councils was however to receive a major setback in the early 1970's, with the re-emergence of the motorway issue on the local political agenda.

Again the major focus of concern rested with the sanctity of Hagley Park. The City Council's initial attempts to begin the building of this section of the major route network (from Harper Avenue to Salisbury Street) were halted in 1970 when it was realised that the reserve status of the Park required revoking. This could only be achieved by an Act of Parliament, and the legal process was slow and tedious.

This legal delay was a boon for the anti-Park-Motorway lobby as it served to highlight the road-through-the-Park as an election issue for the 1971 mayoral race. Labour councillor and mayoral candidate Neville Pickering - a chief supporter of the C.P.S.G. in the previous M.T.P. debate within the City Council some five years before - built his campaign around the major city issues of the time: the proposed Commonwealth Games Stadium site,[49] and the building of the Park motorway.

When the people of Christchurch returned a Labour controlled council (albeit with a majority of one) and Pickering consequently became mayor, the political fate of the M.T.P. was again in the balance. As a complete, all-or-nothing proposal the threat to one component part (the Hagley link) jeopardised the traffic efficiency of the whole scheme. The C.C.C.'s rejection of the M.T.P. over the issue of Park 'intrusion', essentially deleted those projects within the City Council area from the Plan. In reaction the N.R.B. was forced to support the City's call for a complete re-drawing of the M.T.P. in its entirety. Director of Roading F.A.Langbein

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49. The 1974 Commonwealth Games were to be held in Christchurch. Mayor, and Citizens candidate for the post in the 1971 Election, Guthrie, had favoured Porritt Park as the Games track and field venue. Pickering and Labour advocated construction on a new complex at Queen Elizabeth II Park.

in June 1972 announced the Roads Boards recommendation that the Regional Authority should start again with its traffic proposals.[50] The change of council and heart in Christchurch City had again questioned the fate of the long-term metropolitan wide traffic proposals.

This political change of heart in Christchurch City came at a time when the winds of change were also blowing on the Regional front. Within the Regional Authority itself an opinion had developed that regional needs were being constrained by the spatial limitations placed on its activities. Being confined essentially to the built-up area surrounding the city, the effectiveness of regional growth control was hampered in that much of the rural hinterland which was the "region" was beyond the Authority's boundary. The move toward an extension of the Regional Authority boundary and thus the institution of truly co-ordinated town and country planning, was therefore to occupy much time and discussion before the change was eventually made in 1974 (Figure 4.6).

The extension of the Authority's sphere of influence, the economic and political change of situation and the various delays in plan implementation which be-devilled the M.T.P. works programme during the late 1960's and early 'seventies, could not go unrecognised by the Second Transport Study. While these changes had rocked the basis of the Study's planning environment, its task of survey and report had ground on slowly. Originally intended for completion by 1973, the Second Study received a two year extension of life. Ostensibly this was because of staff shortages and survey delays,[51] but almost certainly the changes in the planning environment had affected this decision also. Increasingly, as the study had progressed, the situation in which planning was being undertaken called for a broadening outlook. Urban transport planning in Christchurch could

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50. Christchurch Press, 16 June 1972, p.1 and 22 June 1972, p.1.

51. M.T.P. Report No. 182 (March, 1971).

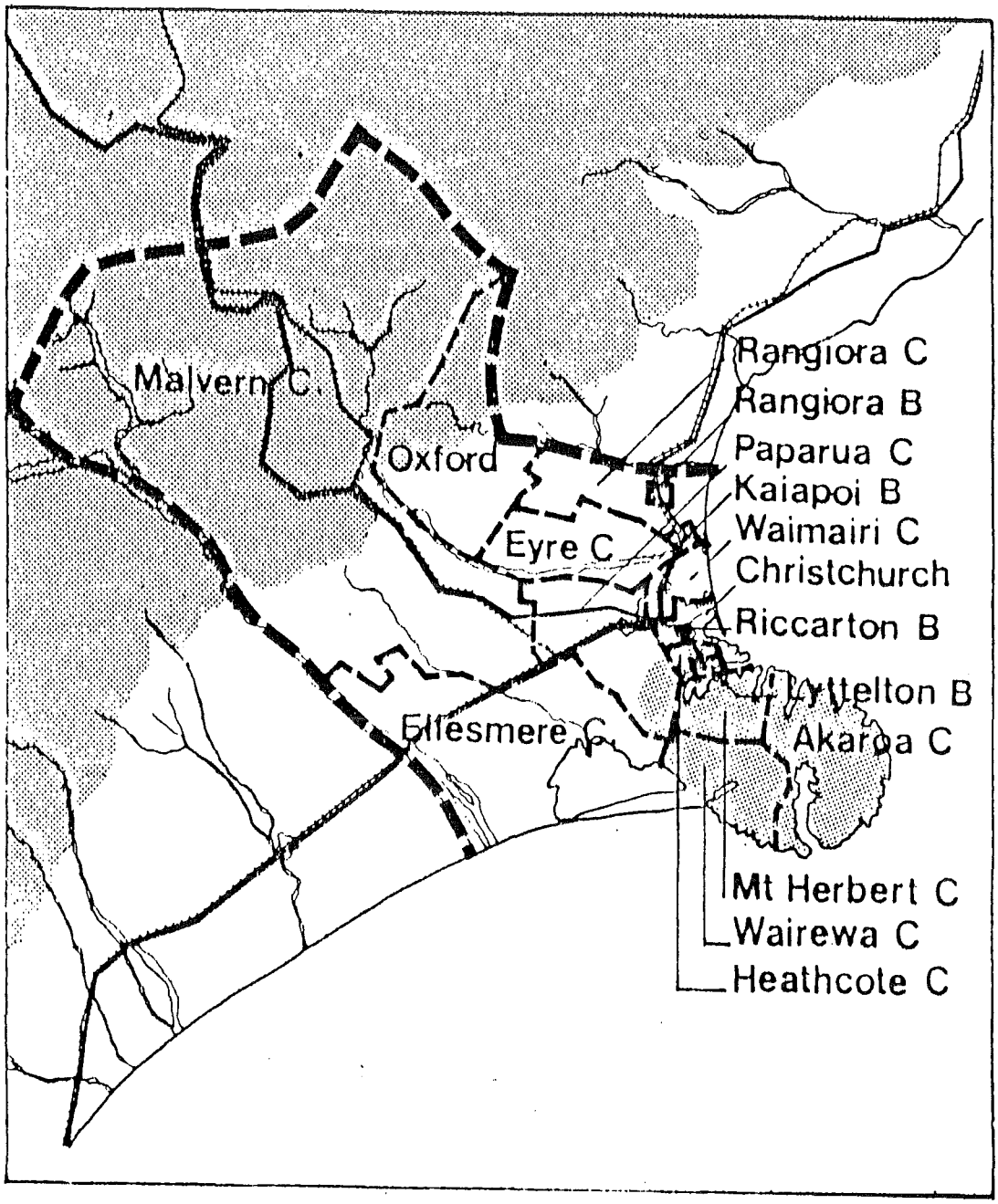

Figure 4.6 The extended C.R.P.A. Regional boundary.

no longer afford to be isolationist or dogmatic, but had to be more open to outside influence (be it political, economic or administrative) and adopt a flexible outlook to the city's future needs.

The Second Transport Study, by the time it had come to announcing its conclusions, seemed to have become somewhat more than the originally envisaged "review". The results were awaited with some anticipation, as it was expected to provide a new outlook and return the urban transport planning in Christchurch back to an even keel.

The tone of the findings were set very early on. Report Number 202 (August 1974) on traffic service and network assumptions stated that

> "While all forms of travel have been investigated it is obvious that it is still the area of increasing vehicle movement...where most of the travel problems lie."[52]

The problem apparently facing the Authority from the 1960's had not changed. The Report confirmed the foundation of Authority road planning: the level of service policy objective was maintained with only slight modification. The programme of road network development was also confirmed, but in a somewhat altered state. Motorway locations were confirmed but a change of emphasis in the building programme had been suggested by changes in traffic movements. From the survey results it had become apparent that suburban roading was more required than the Central City components of the 1962 Plan. The traffic problem had appeared to have become somewhat reoriented from its earlier inner city focus - suburban development was the new focus.[53]

The needs of other transport modes had not, however, been forgotten. In its establishment the Second Study had been charged with re-examining the possible future role of public transport. This move was a reflection of a noticeable overseas trend away from highway and road development and

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52. M.T.P. Report No. 202 (August 1974) p.1.

53. Ibid.

toward transit options. The results of the study concluded that public transport could only be a "junior partner" in total travel patterns.[54] Whilst needing to be maintained to meet social responsibilities to the car-less groups, public transport could not greatly increase its role against the benefits of the car.

Cyclists also received attention from the Study. The recommendation for the development of cycle-way networks[55] through the city was again a reflection of the Second Study's attempt to integrate all modes into planning consideration. Such proposals reflect a different approach to "integration" from that of the 1960's. In the earlier period the aim to seek the "best" solution had meant public transport and other modes seen as uncompetitive, were largely ignored. Their role in the total transport picture was recognised in the Second Study as was the need to plan for their continued development as part of that "total picture".

Finally, the Second Study had been concerned with the future of the Christchurch Region. The relationship between population growth and the need for transport planning was reasserted.

The definitive conclusion of the report was however that the motorways in the city were still necessary.[57] The principal issue remained, vehicle movement and only elements of this problem had altered.

CHANGES IN THE PLAN PROPOSALS

The 1969 Survey data had revealed traffic growth rates which, in general, had exceeded those predicted for the decade of the 1960's.

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54. M.T.P. Report No. 210 (June 1975) p.25.
55. M.T.P. Report No. 198 (1974).
56. M.T.P. Report No. 155 (April 1969).
57. M.T.P. Report No. 202 (August 1974) p.2.

However, by the time this information had come to be assimilated in the Transport Plan, other factors (as indicated above) had drastically reduced the effectiveness of the proposed M.T.P. It was in this light that the Second Transport Study's recommendations, proposing further reductions in the scale of the plan, were determined. Again this was an attempt at regaining credibility for the Plan in the face of the uncertain planning situation which now existed.

In these reductions (see Figure 4.7) the proposed Period IV motorway network was changed considerably with the replacement of seven miles of central city motorways with the already installed Traffic Systems Management procedures. By 1975 (when the Study's final recommendations were made) the City Council had already instituted a system of one-way street pairs and area traffic light control to improve the flow of traffic within the four Avenues. The success of this "management" venture was such that the inner city traffic problem had been relieved, and the central motorway provisions (planned to be in place by 1985) were thus abandoned.[58]

In all, some eighty kilometres of regional road improvements were deleted from the operative scheme and modifications suggested to the programming of Plan developments.[59] The summary report had itself concluded

> "...the level of service now recommended can be maintained with a slower rate of programmed construction than that embodied in the operative scheme."[60]

In effect what was being advocated was the "stretching" of the road improvement programme in relation to the Authority's population

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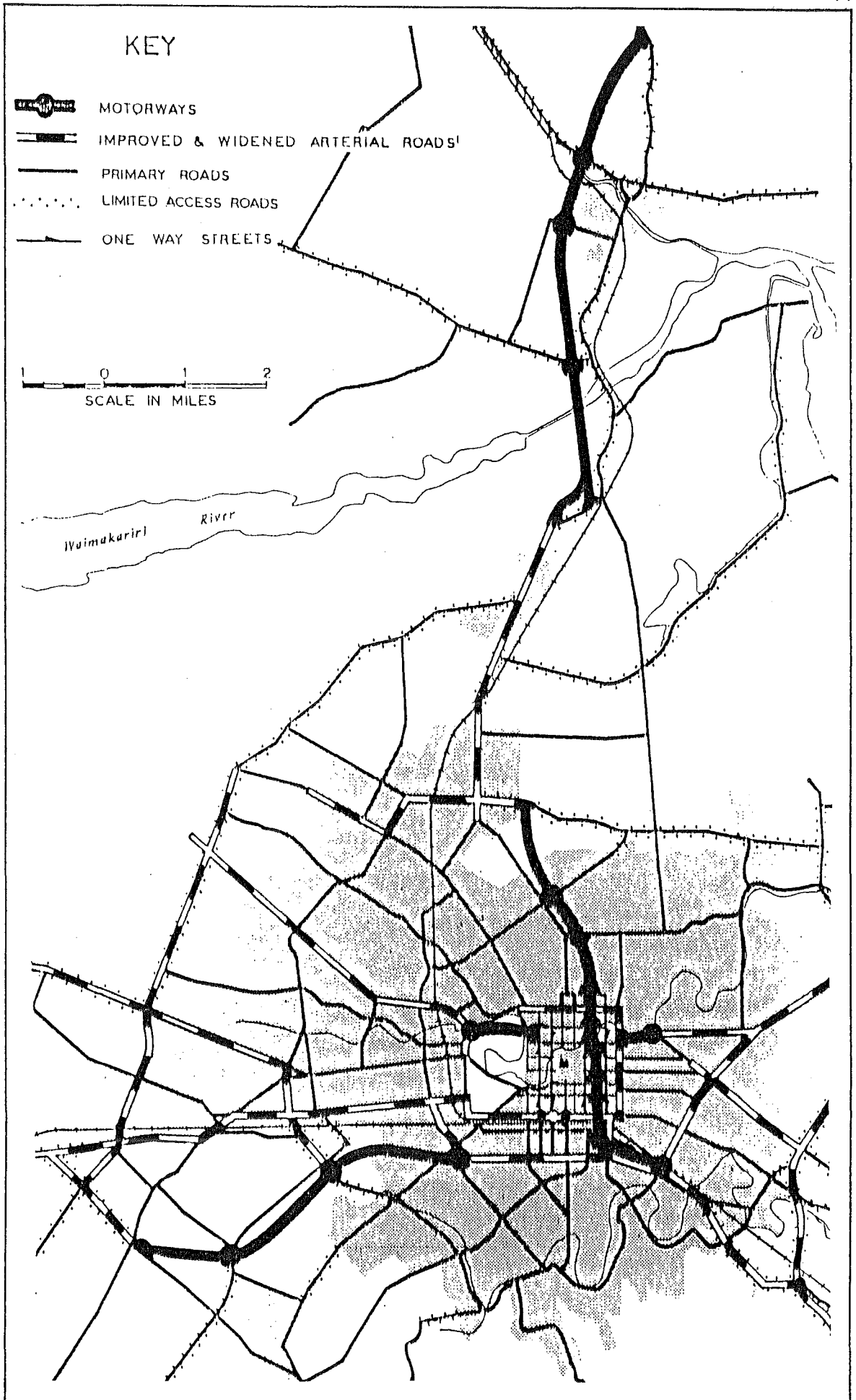
58. The motorway corridor designation in all central motorways was however retained as a future planning measure.

59. Most notably in light of the increased importance of the suburban traffic component - see above.

60. M.T.P. Report No. 210 (June 1975) p.41.



Source: M.T.P. Report No. 189 (Dec.1971)

Figure 4.7(a) M.T.P. Road Network incorporated in 1971 Regional Scheme

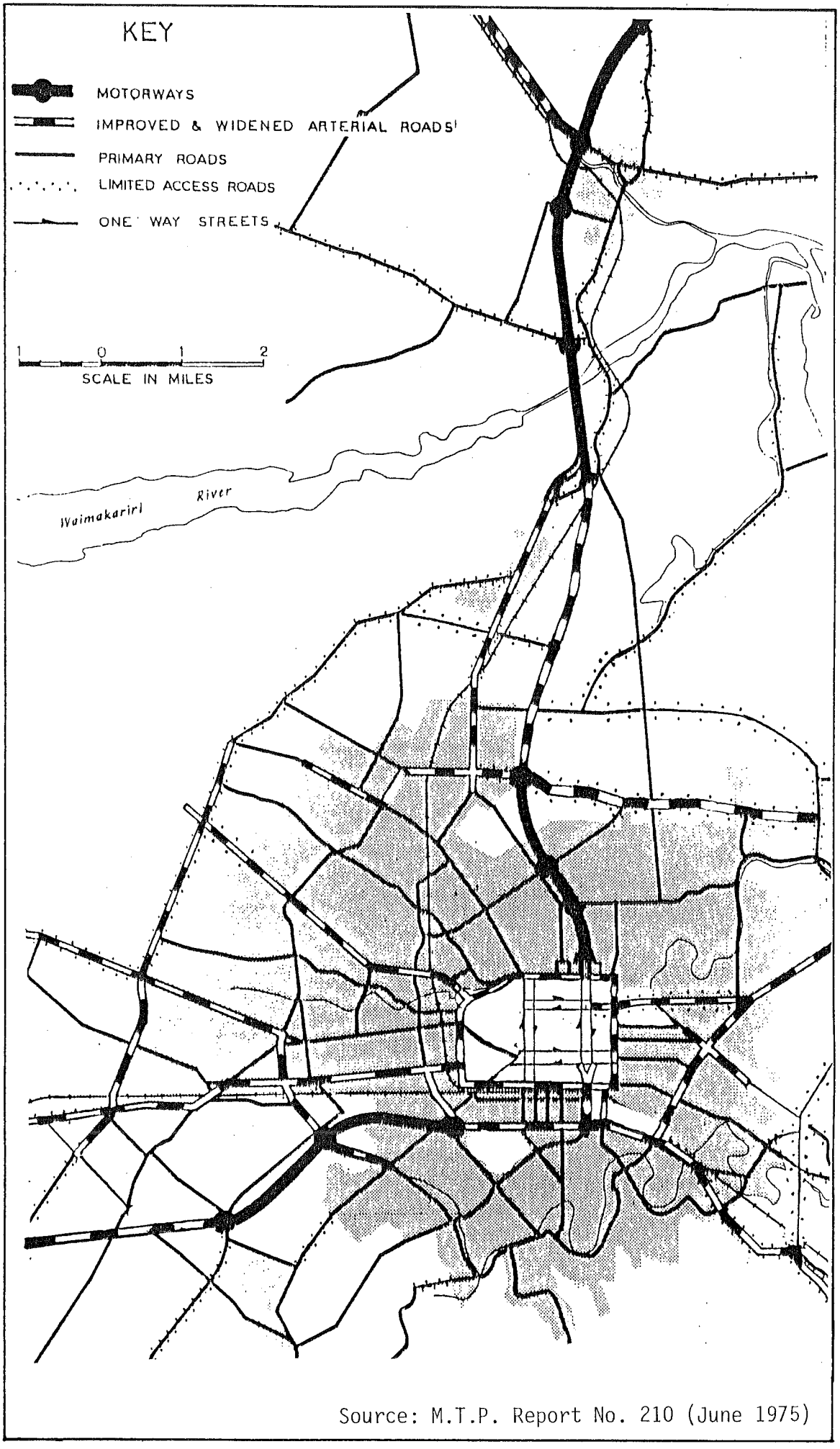


Figure 4.7(b) M.T.P. Road Network after the Second Study recommendations

forecasts. What this meant in practice was that the Period II network of the operative scheme, originally set for completion in 1975, was adequate to meet needs of a larger population. The original Plan had over-insured the road network. The completed Period II network was suitable to meet the demands of the expected 1980 population. Consequently Period III works could be also delayed some five years.[61]

The Plan's temporal focus was also altered. The 1971 Operative Scheme proposals had presented a programme in two parts, an immediate works period and more tentative future plan horizon (see above). The new programme re-emphasised this move toward more incremental planning.[62] The setting down of a firm blueprint for a distant planning horizon which had characterised past planning efforts was further dispelled when the review proposed a system of three planning scenarios. The immediate task (for planning Period II to 1980) was to prepare a realistic list of proposals for implementation. The second scenario suggested probable needs for a balanced network to 1990. Beyond this the plan suggested possible alternatives only, arguing

> "The network as a very long-term concept is no longer seen as appropriate."[63]

The Review was attempting to adjust the Plan to allow for a dynamic planning environment. Work at the completion of any single period could be left as final if trends indicated that traffic numbers would not rise significantly after that time. Each period was a plan in itself and could be a component of a larger plan. Previously the large plan had been the sole aim. Flexibility was now the key, (a move further vindicated with the realisation that the Second Study's delay had meant the survey results were even more outdated).

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61. M.T.P. Report No. 202 (August 1974) p.4.

62. M.T.P. Report No. 210 (June 1975) p.41.

63. M.T.P. Report No. 246 (November 1978) p.3.

In many ways this Second Study reflected the Regional Authority's facing up to new planning circumstances. Change, in a number of forms, had affected the road programme and planning was adapting to a new role, in a time of economic down-turn. The Second Study can thus be considered as an attempted response to changing attitudes and externalities, not the simple review it had been intended, and this was recognised in the general reception of its changes.

Implementation of these proposals in Regional and district planning schemes was still, however, some way off. It was envisaged that the immediate planning period proposals could be incorporated in District Scheme reviews whilst the longer term plan proposals would await the Regional Scheme Review before being adopted.[64] In light of this situation ample scope existed for discussion of and reaction to the revised roading plan. This consideration was also able to be viewed in concert with the results from other Regional Planning documents which were becoming available at this time.[65] These latter documents were largely concerned with the nature of, and shape of future city growth (e.g. the "Regional Indicative Plan", 1976, and "Form and Direction of Urban Development" publication in July 1978). From these complementary reports a number of growth scenarios for the regional future had been outlined, incorporating within them changes in the planning situation (i.e. slower growth, inflation and the energy crisis of the mid 1970's).[66]

Reaction to the transport study report, often with reference also to its complementary counterparts on urban development, was favourable.[67]

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64. M.T.P. Report No. 240 (June 1979) p.3.
65. This reflects the achievement finally of a form of integrated regional planning.
66. M.T.P. Report No. 246 (November 1978) p.1.
67. M.T.P. Report No. 240 (June 1979).

Report 246 "Current Developments" - in essence a review of the Second Transport Study itself - found little cause for concern. Despite the noticeable slowing of growth which had occurred through the 1970's the changes recommended in the Second Study were still applicable. The motor vehicle had continued to be the principal means of travel and needed to be planned for. Levels of traffic service were still at issue. The "do-nothing" alternative advocated by some commentators would represent in both Regional and Local Authority terms, abdication of responsibilities.[68] The general conclusion drawn by all body's concerned was that the need for effective planning had increased, not decreased, as a result of the change in economic climate.[69]

The flexibility of the Second Transport Plan was similarly lauded. In view of the inherent uncertainty which plagued any planning process (a feature heavily underlined in view of the M.T.P.'s past planning performance) flexibility and more specifically planning time extension, were becoming more warranted than previously. Greater emphasis on solutions requiring less of a commitment was the vogue. Traffic systems management dominated this time of insecurity.

Where the Second Study planners were most severely chided was with their writing off of the public transport option. The energy crisis had highlighted the advantage of this alternative. Clearly, the Second Study had not gone into the possibility in depth, but the dominant urban transport planning focus of attention was, by the later 'seventies, switching toward the role of public transit in the urban sphere.[70]

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68. M.T.P. Report No. 240 (June 1979) p.23.

69. Ibid, p.8.

70. This received formal expression in the passage of the Urban Transport Act 1979, which placed planning consideration for a variety of modes on a firmer footing, and thus negated much criticism of the Second Study on these grounds.

Finally, increased flexibility and the deletion of many of the more controversial aspects of the Original M.T.P. (namely the central motorways) from immediate planning consideration, made the Second Study a more palatable pill for concerned Authorities to swallow. In many senses it was a compromise to which the local authorities were readily willing to accede. Immediate period works were, as requested, to be included as part of District Scheme review (e.g. Christchurch City 1979, Waimairi 1984), and longer term protection for arterial routes were catered for in the Regional Scheme Review (1979). Despite changes in the temporal component, the Original M.T.P. network remained remarkably intact, the process of almost continuous revision of its programming had however moulded it more to changing urban demands. By 1980 a satisfactory Plan appeared to have been produced.

Summary

This chapter has sought to provide an indication of how change in the urban transport planning environment, affected the proposals of the Christchurch Master Transport Plan. The initial debate over the acceptance of the Plan in principle was, at the outset, couched in terms of a facility location problem. The Hagley Park motorway proposal served to polarise public opinion against the M.T.P. The Planning Study Group's alternative plan contributed to this but for them (the C.P.S.G.) the issue was deeper. Their concern hinged on planning practices - the M.T.P. was not the integrated plan the C.R.P.A. purported it to be. Rather, the C.P.S.G. argued, the M.T.P. simply advocated road network changes and did not consider other town planning needs.

The arrival of Buchananism onto the worldwide urban transport planning scene further changed the nature of the M.T.P. debate. Buchanan gave credence to bottom-up planning methodologies which the

M.T.P. had not adopted. When called in to adjudicate on the Christchurch debate Buchanan was asked to apply his method to the existing plan, a prospect which was impossible in light of the methodology.

The mid 1960's however, also marked a period of change within the C.R.P.A. itself. The adoption of policy planning meant that finally a truly integrated approach was possible and not merely contained in the Authority rhetoric, as of old. The Second Transport Study continued with the theme of change. The plan-process had to continue and, whilst intended to be merely a review of past trends since the late 1950's, the Second Study steadily grew in scope. Changing traffic trends and technology, implementation delays from the earlier debate and financial problems, the City Councils political decision to scrap the Park motorway and finally the 1970's economic downturn, contributed to form a more complete reassessment of traffic needs. The review became a second M.T.P. Whilst it was stated that the problem had changed very little - being still one of vehicle movement - the solution proposed was itself altered. The subjective interpretation of the decision situation had changed as much as traffic trends, thus necessitating plan changes.

In the following chapter the focus of the study changes somewhat to specifically address the relationship of the M.T.P. to urban order. The theme of 'dynamism' in planning however remains.

CHAPTER 5

CHAPTER 5

THE M.T.P. AND URBAN ORDER

As was indicated in an earlier chapter, (see below page 16) the Christchurch metropolitan area prior to the 1950's had grown in a largely concentric pattern around its original centre (the area within the town belts). This development had been made possible by the topograhic nature of the city's site, and had been aided by transportation components (e.g. the development of radial public transport routes). The link between transportation and urban form was therefore identifiable in the Christchurch case, and in many ways the evolution of the M.T.P. proposals is a continuation of this relationship. Indeed, it may be said that the provisions of the Christchurch M.T.P. owe as much to a concept of urban organization as they do to matters of movement facilitation.

A CONCEPT OF URBAN ORDER

The problem of determining the pattern of urban growth in the Christchurch area had itself been the major catalyst in the formation of the Christchurch Regional Planning Authority in the mid 1950's. Post-war "unplanned growth", particularly at the periphery of urban areas where land was cheaper, had committed local authorities to extending public utilities and resources outward to meet demand. In the case of Christchurch, such concentric growth had covered valuable agricultural land whilst less attractive areas closer to the city centre were left undeveloped.

Concern expressed at these trends and the need for conservation of productive farmland and public resources, culminated in the passage of the 1953 Town and Country Planning Act in New Zealand.[1] The Regional Planning Authorities which were established under this Act were charged with ppreparing regional schemes, designed as a

> "...guide to public authorities and local authorities and all persons in relation to the conservation or development within the region of the public utilities, services, industries amenities and other matters dealt with or adverted to in the regional planning scheme."[2]

In the Christchurch case the regional authority defined its first task as being the delineation of a "Rural Zone" - in other words the creation of an area surrounding the existing city within which planning regulations restricted the type of land-use. This move was a means to concentrate the city's future growth and to also ensure an orderly development of the metropolitan area.

The decision to prepare the Regional Planning Scheme in Sections (starting with the Rural Zone proposal) is somewhat misleading as it tends to suggest attention was given to Regional problems in isolation and not in a broader holistic approach. This decision was made on technical grounds, in that the Authority had only limited staff and resources with which to attempt its 'regional' approach. From the outset however, the preparation of each section was to be disciplined within the broader context of the Authorities planning task.[3] This latter point is relative to the consideration of the Plan's second section - that of transport and communications - which was brought to regional consideration in 1956, with the introduction of the proposal for a Chri$tchurch Master Transportation Plan.

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1. New Zealand Parliamentary Debates Vol. 299, pp.743-4.
2. Town and Country Planning Act 1953, Section 3(2).
3. New Zealand Roading Symposium 1971, p.43.

Recognition of the need to integrate transport planning with the other elements that would make up a 'Regional Scheme' was first expressed at the initial Traffic and Transport Sub-committee Meeting in August 1956. Regional Planner Northcroft asked Sub-committee members to think not merely in terms of transportation problems, but to consider the effect of any Plans that may be formulated on the form of the city and the livelihood of the region's population.[4] The issues of transportation and city development were thereby linked from the start.

Initially the relationship between the transport planning of the Regional body and the organization of the urban area involved one primary problem: the present and proposed role of the Central Business District (C.B.D.). Indeed the issues of traffic movement and the viability of the central area were inseparably entwined, a feature highlighted in the nature of the M.T.P.'s original development.

The process of data collection most obviously exposed this feature. Although the transportation plan was originally intended to encompass a metropolitan wide focus, the perception of the nature of the traffic problem in the Christchurch situation in some respects precluded this, as it incorporated a specific spatial focus - on the C.B.D.

The surveys conducted in this "Data Collection" Stage of the planning process concentrated largely on a defined Central Traffic District[5] (see Figure 3.1). Consideration of aspects such as parking provision,[6] travel patterns,[7] and traffic growth,[8] concentrated attention

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4. C.R.P.A. Minute Book "Traffic and Transport" pp.2-4 (14th August, 1956).
5. M.T.P. Report No. 20 (March 1959).
6. M.T.P. Report Nos. 16 (June 1958), 17 (July 1958), 25 (October 1959), and 44 (July 1961).
7. M.T.P. Report Nos. 31 (August 1960), 37 (May 1961), 38 (May 1961), and 42 (July 1961).
8. M.T.P. Report Nos. 18 (August 1958), 43 (July 1961), 47 (November, 1961) and 49 (January 1962).

on the needs of the urban core to a large degree in isolation from those of the rest of the city. The traffic problem - expressed both in terms of congestion on the central road network and insufficient parking supply, was perceived as an inner city problem.[9] In this manner, the M.T.P. survey process had promoted and maintained a largely traditional view of urban organization with the needs of the C.B.D. assuming a dominant role.

The product of the planning process - the outline plan prepared in the early 1960's - was to become a further reflection of this established urban concept. As Eng (1967) notes:

> "In a fundamental sense the Plan is more than a roading plan but rather a plan for the optimum use, by an expanding regional population of the facilities of the city centre."[10]

The proposed motorway network was intended to concentrate activity on the city centre via the adoption of what the planners termed the 'tangential approach'.[11] This basic tangential concept involved the deveolopment of a framework of important traffic routes serving the C.T.D. In this manner the investment in urban traffic facilities for Christchurch was serving to complement the already existing pattern of capital investment concentrated as it was on the C.B.D.[12]

The proposed parking provision component of the outline plan was to be a foil to this. It in turn reflected the dominant role accorded the centre. While no specific recommendations were made in the outline plan in regard to parking terminals, their requirement and possible location were recognised.[13] The basic aim of the final outline plan was,

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9. Johnston (1965) notes that a shortage of central city parking would "...precipitate the decline of central retailing to an extent both harmful and undesirable for the whole community." (p.160)
10. Eng (1967) p.61.
11. C.R.P.A. (1962) pp.24-26.
12. Christchurch Press, 1 July 1961.
13. Refer above to Footnote 6.

therefore, that the proposals should make it

> "...no more difficult to travel to the city centre than elsewhere..."[14]

The city centre should retain its dominant position in the urban make-up, with parking and other facilities being provided accordingly.

The maintenance of existing movement patterns within the urban area was clearly the principle upon which the Plan was based. It had become apparent that the Regional Authority was promoting an established urban prescription. The 1962 Outline Plan in attempting to co-ordinate with the existing Regional Scheme,[15] was itself also intended to assist the programming of future growth alternatives for the Christchurch urban area.

In such a context, it may seem something of an irony that in planning for the car the M.T.P. also promoting an urban form whose demise had been largely automobile inspired. The rise of the car had reduced the primacy of the central city in terms of urban organization. The M.T.P. had adopted at one and the same time the car and a traditional, centralised concept of urban order. The success of such a measure would itself lie in strict planning control and the successful development of the whole Plan network.

POLICY PLANNING AND THE EXPANSION OF THE URBAN ORDER CONCEPT

The mid-1960's marked a period of considerable change in planning concepts and the administration of regional planning in Christchurch. With the M.T.P. opponents of its provisions were expounding precinct philosophies and the virtues of Buchananism. Added to this, the arrival of the new Regional Planner, Barclay Millar, brought a new

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14. C.R.P.A. (1962) p.36.
15. C.R.P.A. Regional Scheme Section One, Rural Zone, 1959.

approach to the planning process. This was also to be a time in which the role of transportation planning in the spatial organization of the Christchurch region was further developed.

Buchanan's call for the more complete integration of transport and town planning through the adoption of a

> "...bundle of traditional planning prescriptions..."[16]

was received by a surprisingly receptive audience in the C.R.P.A. Whilst groups such as the C.P.S.G. had concentrated on the M.T.P.'s negative aspects in relation to the Buchanan "revolution",[17] the Regional Authority had begun to turn its attention to the role of the M.T.P., and indeed regional planning, in the local urban scene.

Publication in February 1963 of the "Synopsis of the Planning Position" marked the beginning of the process of redefining the role of regional planning in Christchurch. It was realised that whilst the C.R.P.A.'s intended aim was to produce one comprehensive regional scheme, it had in fact gone about the task in a piecemeal manner. Regional objectives had never been completely expressed as an entity. The production of a Regional Master Plan (completed in 1967), with its broadened range of specifically expressed policies, was intended to redress this "oversight". The isolated approach to individual urban problems - originally the product of manpower shortages in the 1950's, but which had continued to characterise regional planning - was now replaced by a framework of integrated policies.[18]

With this change the nature of regional planning became more directly prescriptive. Whereas prior to the Master Plan prescription

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16. Hart (1976) p.99.

17. Notably the top-down rather that bottom-up planning technique (see above p. 55-58).

18. The Regional Master Plan was formerly incorporated into the Regional Scheme as part of the Planning Data volumes - C.R.P.A. (1968).

had only been a vague, implied objective of the Regional Scheme, consisting solely of zoning recommendations, the new programme expressed a different approach. Policy Report Number 7 in the Master Plan ("The Needs of Urban Form")[19] was an attempt to succinctly establish the parameters of the Regional Planning task. This Report concentrated on the demand for land for living purposes as its planning focus.[20] It argued that such a demand found expression in three forms: "amount, distribution and the question of when it was needed". "Amount" was to be a key parameter in the planning task. This was dependent on factors such as population forecasts, the range of land uses required for the home, work and play activities of the population and the density at which such activities would take place. In their turn "distribution" dealt with the apportionment of regional land area needed for each respective land-use, and "when?" addressed the planning horizon to work toward. It was within this context that the other major regional policies - protection against sprawl, matching development to communications, the provision of recreational space and recognition of "urban" and "rural" activities - were to operate. Good planning was essential to the final product.[21]

The first technical report associated with this Policy[22] delineated the population range within which the regional scheme programme would operate. In assessing the future population (to the twenty year planning horizon ending 1986) a range of possibilities was determined (see Figure 5.1). This provided the initial parameters for the future urban development of the Christchurch region.

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19. C.R.P.A. Planning Report No. 78.
20. Ibid, p.1.
21. Ibid, p.3.
22. C.R.P.A. Planning Report No. 86 (October 1967).

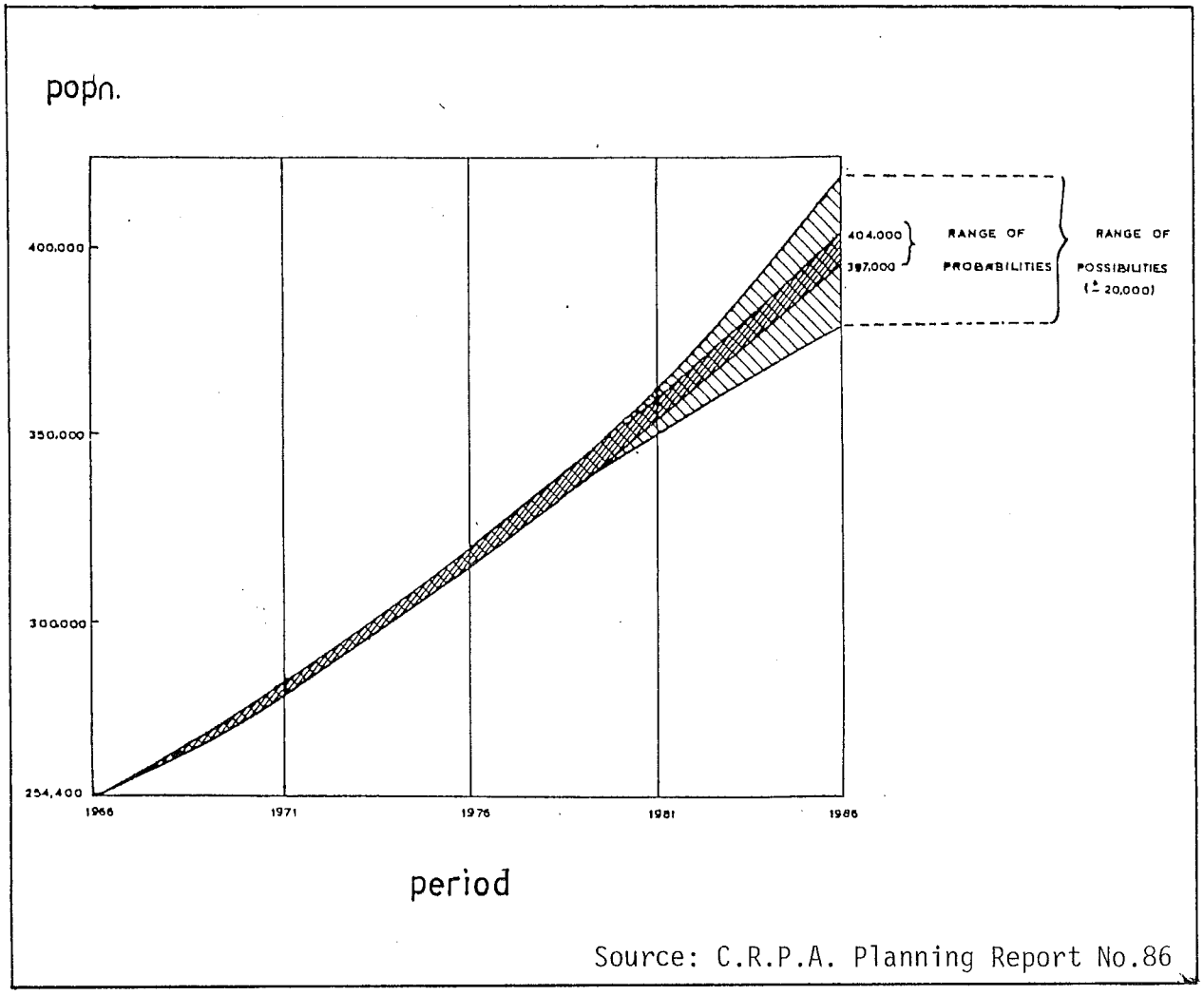

Figure 5.1 C.R.P.A. Population projections 1968.

The distribution of the projected future population was a question considered separately (Policy No. 8 - Form and Direction of Future Urban Development).[23] This policy was important to the complete package in that whereas all previous determined policies had dealt with the avoidance of possible situations through planning,[24] this policy addressed a specific prescriptive aim: directing the future development of the urban area. It was the objective toward which all other policies would be working, expressing a role for regional policies - that they should determine the particular general shape (or form) that development should take, before a specific plan was proceeded with.[25] The aim and objective of all other policies were thereby directed to answer a central question - that concerning the urban organization of the future Christchurch. In this respect the M.T.P. itself was subjugated to an urban order objective. The inter-dependence of transportation planning and urban development was firmly established.[26] The M.T.P. now occupied an integral part in the total strategic plan for Christchurch's urban development.

THE "TRANSPORT RESTRAINT" AND CHANGES IN "URBAN ORDER"

With the regional population expected to approach 400,000 by the mid 1980's and the explicit M.T.P. policy assumption that motor vehicle use remain unrestricted throughout this period, pressure on the road network seemed confirmed.[27] This served to highlight the nature of the restraint which the transport network could become in terms of programming urban growth - a problem the Regional Authority singled

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23. C.R.P.A. Planning Report No. 79 (March 1968).
24. E.g. Sprawl - Policy No. 2,5,6. Transport No.3, Recreational Needs, No.4, Restraints to Urbanization No.6.
25. C.R.P.A. Planning Report No. 79 (March 1968) p.2.
26. Ibid, p.1.
27. C.R.P.A. Planning Report No. 86 (October 1967) p.5.

out for specific attention in the 1968 Regional Scheme.[28]

Three areas were established to act as a guide to district scheme planners when making developmental decisions. Each area was delineated by a proposed maximum level of traffic acceptability, measured in the number of trips per site acre per day (see Figure 5.2).

The first, the area of "central restraint", was made up of the existing C.B.D. This was the area in which the largest number of trips per site acre per day were acceptable. The maximum limit was set at 700 trips per site acre.

Area two included those areas immediately surrounding the C.B.D., which, it was suggested, were

> "...subject to intense economic pressure for development...."[29]

Made up of that area between Bealey, Fitzgerald, Cashel, Stanmore, Wilsons, Brougham and Antigua Streets (excluding the previously identified area of Central Restraint) this "inner Restraint" area was seen to be facing pressure for industrial development. If such development occurred the maintenance of movement through the road system might suffer and the useful life of the programmed network improvements be reduced. This prospect suggested restrictions such that no more than 300 trips per site acre per day be imposed.[30]

The final category of restriction encompassed the remainder of the existing built-up area. Being predominantly residential in character the "General Urban Restraint" would apply through this area to control the traffic-land-use conflict. The maximum limit was thus

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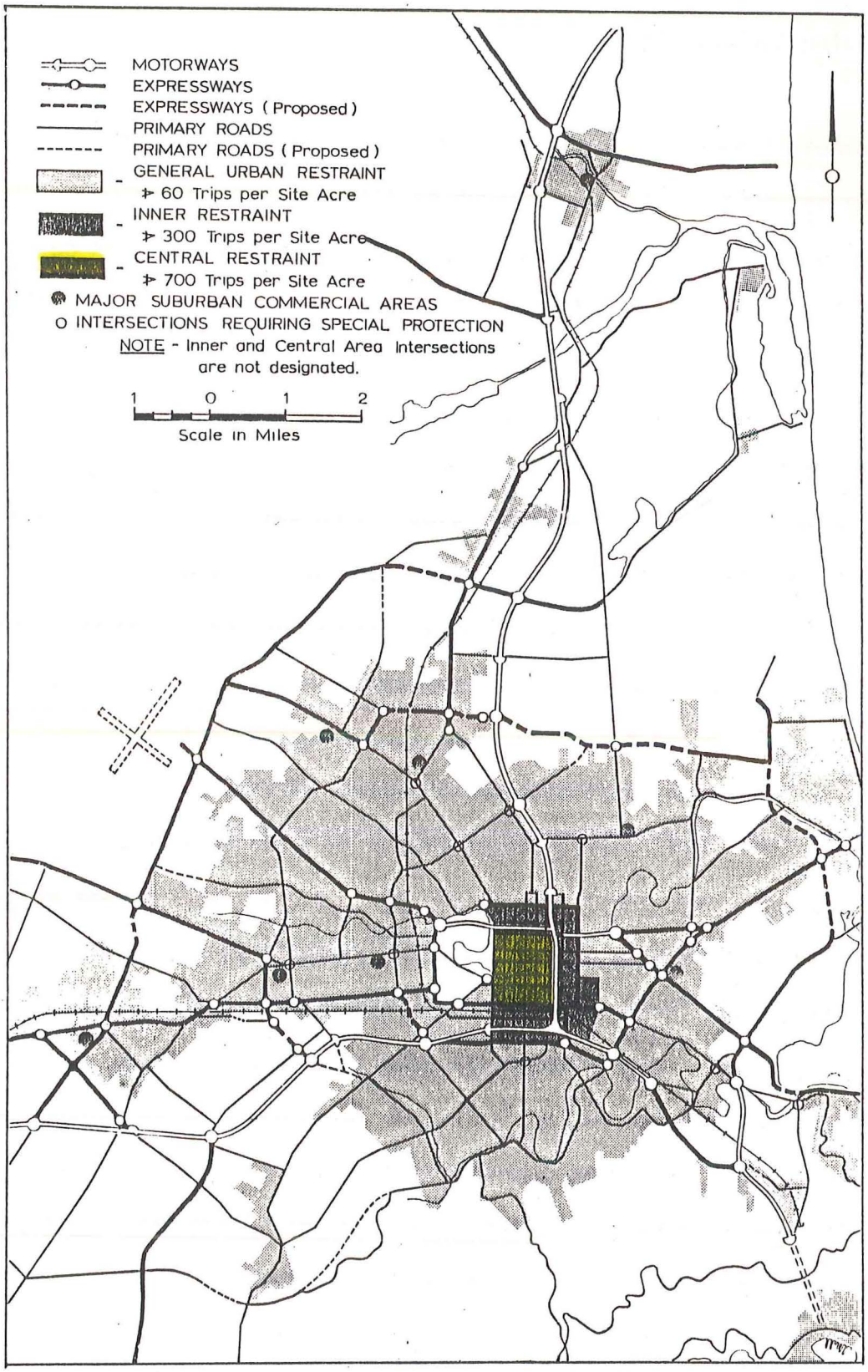
28. C.R.P.A. Planning Report No. 84 (October 1967). Also refer to C.R.P.A. Regional Planning Scheme: Section 2 Communications (1971) Subsection 8.

29. C.R.P.A. Planning Report No. 84, p.1.

30. Such a figure was approximately three times that recorded for the same areas in the 1959 survey. (Ibid, p.6.).



Source: C.R.P.A. Planning Report No. 84.

Figure 5.2 Transport Restraints Plan

set at 60 trips per site area, which roughly approximated a population density of 40 persons per acre.

The introduction of this planning categorization was intended to assist with the co-ordination of development proposals within the built-up area and movement needs. Such a schema again reflected the strategy of maintaining the Central City as the dominant focal point, as opposed to a more dispersive policy for the C.B.D.'s functions. The mono-nucleated urban form was still an important part of the planning philosophy. However, it was recognised that continuing growth in the central area above an ultimate limit would overtax the proposed network improvements and so lower levels of service. Thus trip numbers were to be restricted and to complement this a restirction on employment within the C.B.D. was recommended (a 70,000 employee upper limit).[31]

While such a categorisation based on trip numbers had essentially built out from the earlier transport planning focus on the C.T.D., there was some recognition of a more decentralised urban future. This came in the form of a fourth, less defined, category for development: the suburban commercial centre. The restraints plan implied that such areas should act as the loci for commercial and retail development after the C.B.D. had reached its ultimate employment limit. This may suggest the planning of some degree of de-centralisation and the adoption of a multi-nucleated urban form. However, this element can probably be considered to be more a response to an existing situation than a pre-determined strategic move. Already by the time of the report's presentation (and its later inclusion in the Regional Scheme, Section II) some large-scale shopping complexes were beginning to

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31. Ibid.

be proposed in some suburban areas.[32] As the Report itself was to note

> "The planning of suburban commercial centres is a matter requiring considerable study and careful design....[33]

Their proliferation might significantly alter travel patterns. Therefore, not only was the viability of the central city in question, but the attendant urban order and associated M.T.P. concepts based upon it would also be questioned. The inclusion of this "fourth" category may therefore be a planning response to change, and a recognition that this change itself must be planned.

Confirmation of the changing situation with respect to urban development was not long in coming. As was indicated in the previous chapter, the initial surveys of the Second Transport Study were begun in 1969. Smith and Mains "Ten Year Review" reveals that, in relative traffic terms, the central city's dominance was being reduced. The 1959 traffic survey had shown that one-third of all vehicles entering or leaving the metropolitan area had stopped within the Central City. The corresponding figure for 1969 showed a reduction in this pattern to only one-fifth. They further cited the

> "...marked increase in suburban shopping and employment opportunities."[34]
> (see Figure 5.3)

as the cause of greater growth of traffic on suburban radials than nearer the City. These results highlighted the growing role of the suburbs as traffic generators, which lead to the re-programming of road network developments discussed in Chatper 4.[35]

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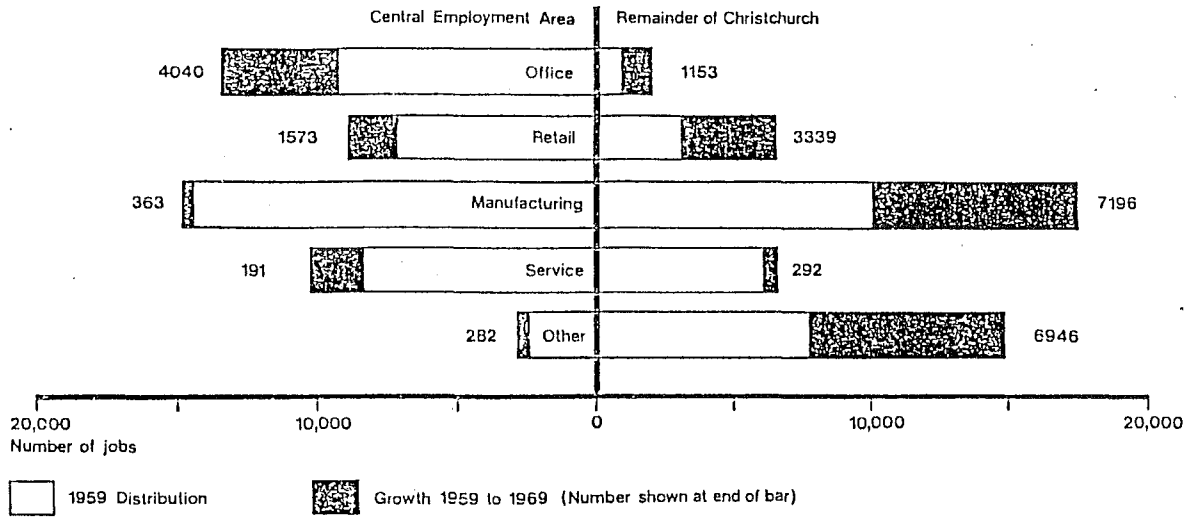
32. The first of the major Christchurch Suburban Shopping Complexes - Riccarton - was opened in the late 1950's. Other similar developments were planned for Bishopdale and Northlands (Papanui) by the late 1960's.

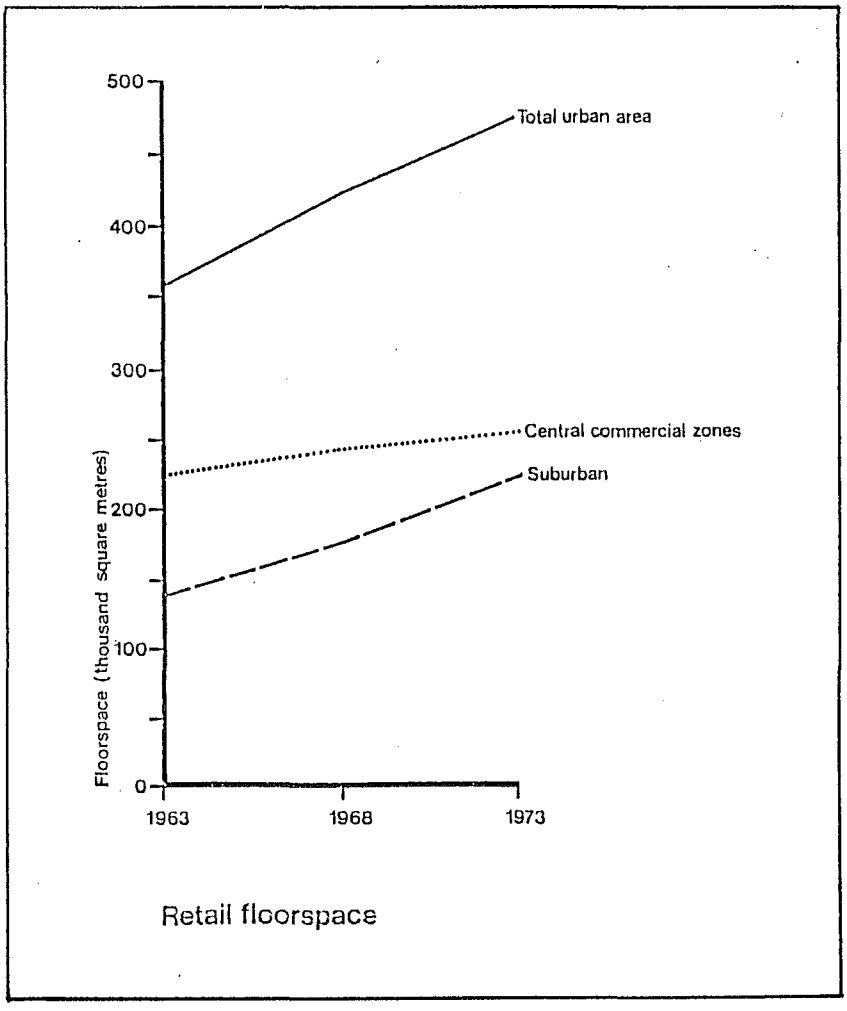
33. C.R.P.A. Planning Report No. 84, p.1.

34. M.T.P. Report No. 176, p.6.

35. See above p. 74.



Distribution of jobs between the Central Employment Area and the remainder of Christchurch



Retail floorspace

Source: The City Plan Review (1977)

Figure 5.3 (a & b) Both graphs indicate the rise in suburban shopping and retailing.

The concern for the suburban component of the "continuous urban complex" continued with the preparation of a further series of planning reports aimed at incorporating bottom-up planning into the M.T.P. The identification of suburban communities or "neighbourhoods" within the existing urban fabric was central to this aim. This task was however quite involved, with the concept of an identifiable neighbourhood or community of interest being extremely subjective. In suggesting means by which these planning units could be determined the Regional Authority reports suggested suburban boundaries were delineated by a variety of features including the sea, estuary and river, hills and topographical features, the location of rural areas and open space, industrial localities and finally the principal road network.[36]

The bottom-up planning methodology (as espoused by Buchanan in Traffic in Towns) had called for roads to be programmed to the localities needs. The method adopted in the M.T.P. however - and apparently the reason for the reports themselves - was largely to programme suburban communities around the already planned road network. In this the Authority was only paying lip-service to suburban needs - trying to up-date its out-dated planning methodology.

Buchanan himself in "Planning in Christchurch: A Review" had called for

> "...a full scale network and environmental study of the whole urban area...."[37]

to delineate such suburban localities. However, the regional authority and constituent councils restricted their approach on this matter. The acceptance of the M.T.P. road network and its continued maintenance as regional policy during the preparation of suburban

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36. M.T.P. Report No. 194 (October 1972) pp.2-3.
37. C.D. Buchanan and Partners, 1966, p.54.

locality studies, precluded an open approach. In essence, whilst stating that all factors of local suburban needs were taken into account when final selection of the principal network was made,[38] the Authority was essentially promoting a "blueprint" planning attitude to the rooms and corridors question. Communities were programmed to fit the needs of the whole traffic network (Figure 5.4). The decision on the form of the road network had been made - those in suburban localities would have to work around this.

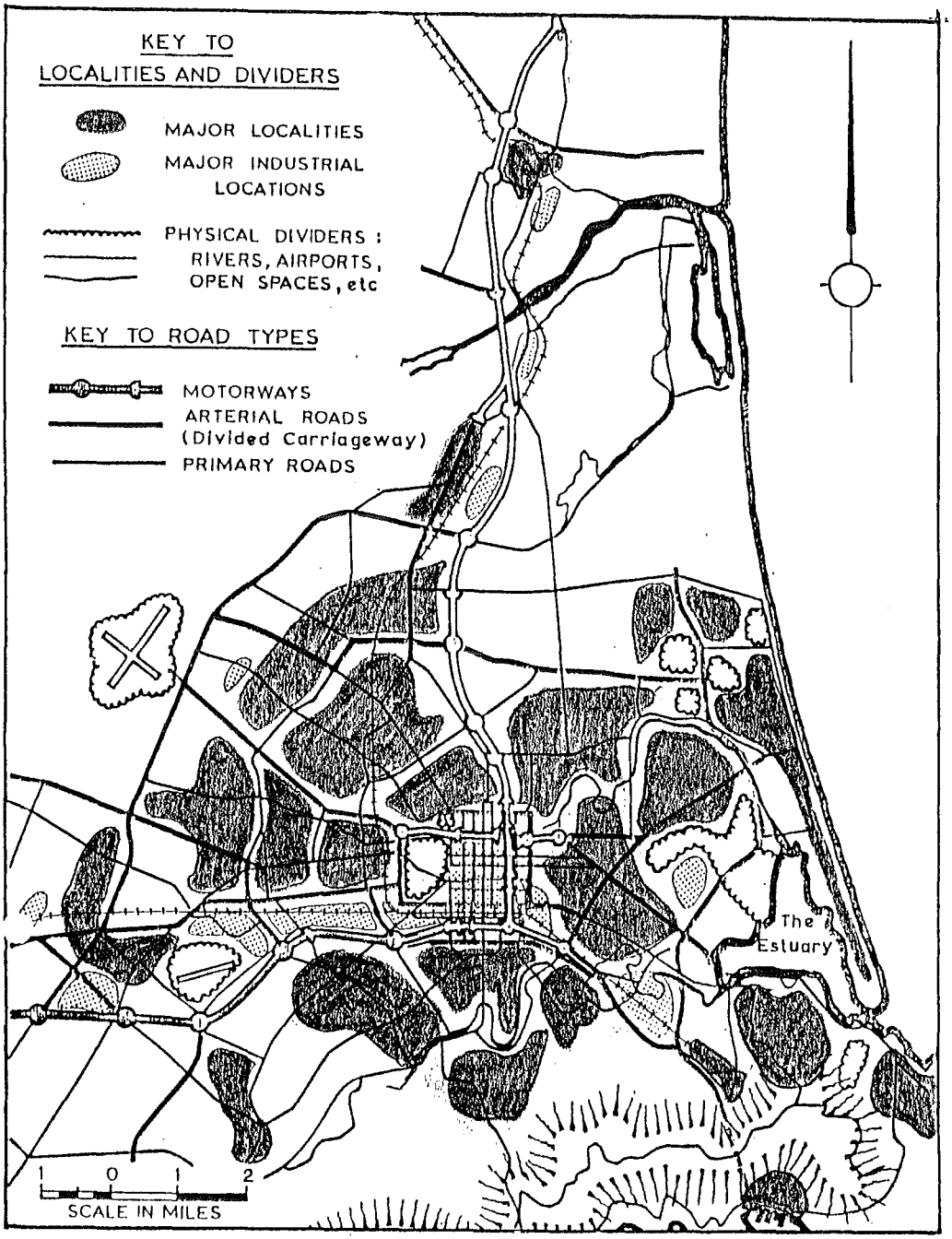
TRANSPORT AND URBAN ORDER: THE LONGER-TERM

The relationship between transportation and urban order in the Christchurch situation was to also reflect a "new" regional perspective following the introduction of the Master Plan. The Christchurch "sphere-of-influence" had itself begun to alter significantly, and in response the spatial boundaries of regional thinking and planning were to expand accordingly.

From its very beginnings the Regional Planning Authority had been 'programmed' into thinking about the needs of the area within the urban fence[39] as its foremost concern. Attention had been concentrated on planning for growth within the existing urban area. Regional planning of urban functions (such as industries, specialist retailing, commerce and residential subdivision) was intent on directing such development to up-used areas within the boundary of the built-environment. Indeed, in this respect, the Authority had estimated that a population of 400,000 people, with all their attendant land-use requirements could be accommodated within the urban fence through the

38. M.T.P. Report No. 194, p.3.

39. The 'urban fence' had been formally defined in the 1959 Regional Scheme Rural Section as the inner boundary of the rural zone. The rural zone was to later become a Green Belt surrounding the city - 1971 Regional Planning Scheme.



Source: M.T.P. Report No. 197.

Figure 5.4 Regional Roads and Suburban Localities.

continued maintenance of the mono-nucleated city form.

The earliest recognition of the limitations of such a policy of concentration was, however, embodied in the rhetoric of the Master Plan Reports themselves. These had identified the possibility of density congestion on the road network as a future problem.

> "...the trend toward intense traffic generating zones must be arrested and consequently a general restraint exists within the present internal areas."

The amelioration of such a situation was seen to lie in a "sound town planning scheme".[40] While the needs of the predicted 1986 population could be met within the urban fence any further growth beyond this would have to be planned for accommodation elsewhere.

It was in such a context that the "Restraint on Urbanization" (Policy No.6). had been established and, in the transport sense, two levels of restraint were determined (Figure 5.5). Where transport imposed a "permanent" restraint any development would be deemed to prejudice the efficient functioning of the proposed full M.T.P. network. "Variable restraint" however, existed in some areas - being dependent upon what stage the roading programme had been developed to, at any one time. Beyond these definitions however, questions remained as to how the road system and M.T.P. could be best utilized in the longer term.

The M.T.P. had itself been planned in an environment where urban sprawl was to be avoided. The late 1960's and early 1970's however marked a change in the planning focus in that the planners began to look beyond the needs of the immediate infilled urban area. Regional planning began to look beyond the existing Christchurch "Region". It had become

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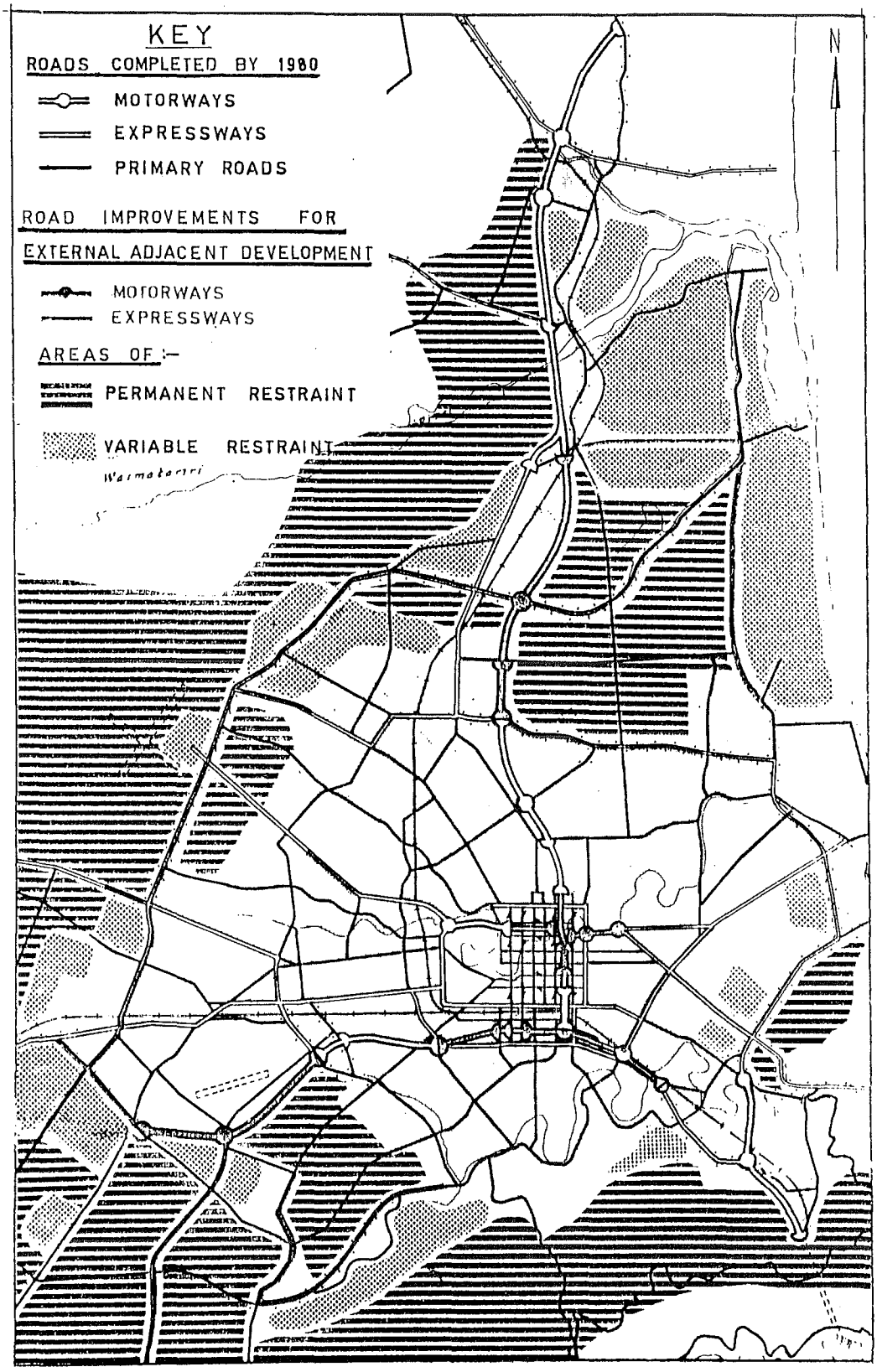
40. C.R.P.A. Planning Report No. 84, p.2.



Source: C.R.P.A. Planning Report No. 84.

Figure 5.5 Transport Restraints - Contiguous external areas.

> "...necessary to establish a method of breaking away from the present to produce a more worthwhile pattern of development, level of traffic service and community satisfaction in the future."[41]

The call was away from the repetitive planning task of the past and toward directive planning. The task now was to stimulate a new form of urban growth and redetermine the nature of the urban order.

The determination of the various options for the direction of this future growth was a task of enormity both in the economic and political sense. The role of the transportation network (existing and planned) in this process was recognised and received expression in the terms of reference given the second transport study. Objective III was to

> "Study the transportation implications of possible future development policies that appear feasible... for the wider region."[42]

This was further enlarged by the realisation that improvement to the transport infrastructure would act as a major tool of public investment, assisting in the achievement of the appropriate planned urban form.

> "Transportation and improvements in the road network are a major tool of public investment... Used wisely this tool reinforces regional planning objectives."[43]

Questions of programming major regional road works became therefore interspliced with necessary decisions on the desirable distribution of regional population growth.

The issue had been addressed earlier (October 1967) with the adoption of Transport Restraints Plan Number 5, which established the directions for the long-term growth of the city (see Figure 5.6). From this it was obvious that the major growth thrust was to be catered for to the south-west of the existing city, whilst growth

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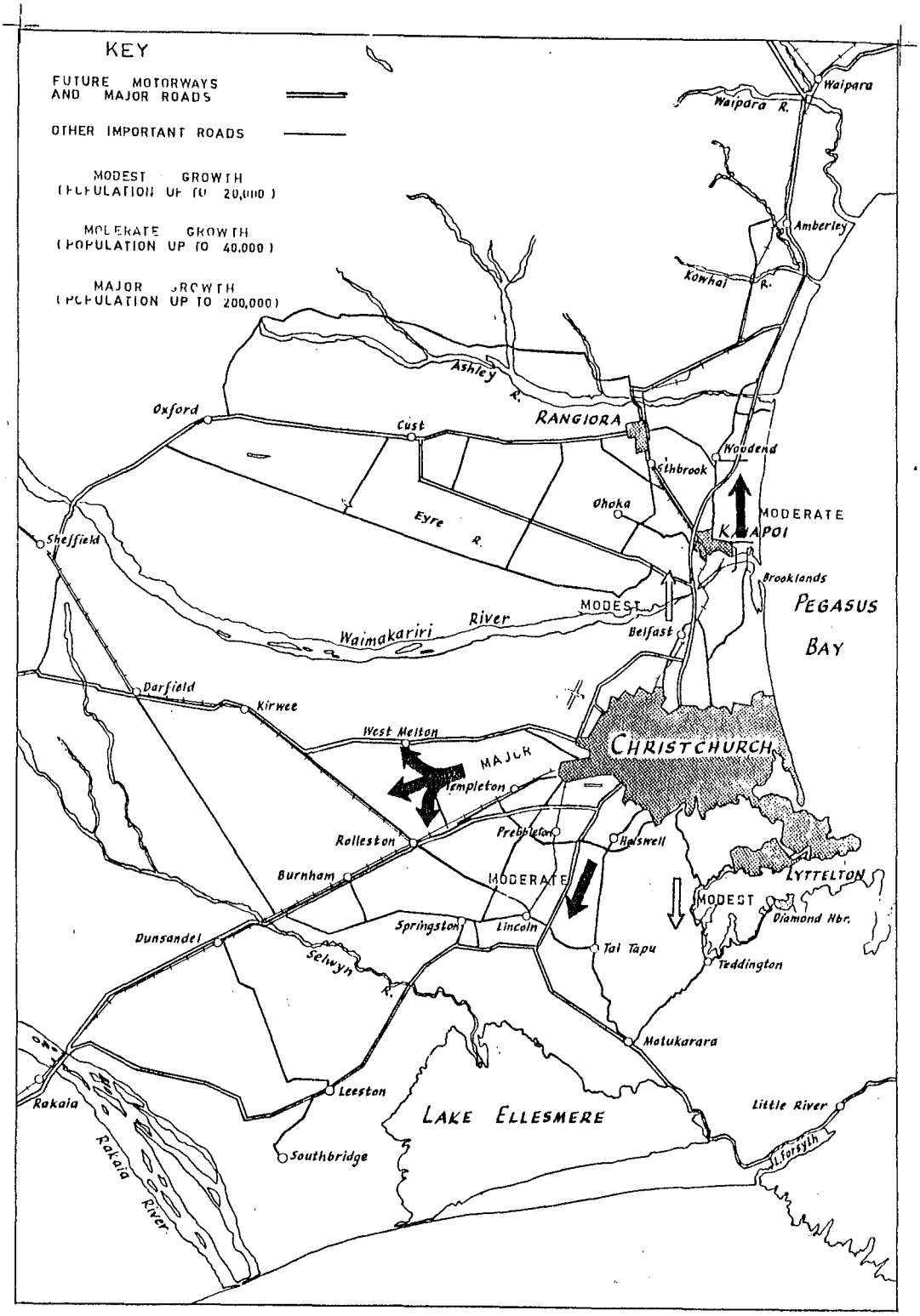
41. New Zealand Roading Symposium 1971, p.48.
42. See M.T.P. Report No. 202 (August 1974) p.3.
43. See M.T.P. Report No. 210 (June 1975) p.8.



Source: C.R.P.A.Planning Report No. 84.

Figure 5.6 Directions for long-term urban growth.

in the south (toward Lincoln) and north (Kaiapoi and Rangiora) was to be more restricted.

The direction that any future development would take was also of interest.[44] Growth in the urban periphery had been ruled out largely by the urban fence policies. The Authority was more concerned to establish a limited number of growth corridors and cited the Voorhees Study of Canberra as an example for Christchurch to follow.[45] This study had suggested the directing of employment away from the central area (so that the growth areas provide an increasing proportion of total employment - consistent with the ceiling on central city employment - see above), and that motorways be used to attract longer trip traffic and syphon it away from areas of intense traffic generating capabiility. In such a manner the tangential approach of the earlier M.T.P. was reaffirmed and policy consistency maintained.[46]

The adoption of Rolleston as the major regional growth point in the early 1970's was to receive much attention on the political scene throughout the decade.[47] The proposal was dependent on significant levels of growth in the region and the economic downturn accompanying the oil shocks of the 1970's had served to arrest these trends. The longer term growth horizon had become more distant.

And it was to be this factor of the regional rate of growth which was indeed to determine the accuracy and necessity of the long-term urban development plans as the decade of the 1970's drew to a close. Politics had played its role in determining the fate of proposals for the "wider region" but it was the recognition of the uncertainty of growth that called for the major reappraisal. Whilst

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44. C.R.P.A. Planning Report No. 112.

45. See Douglass and Main (1971) pp.13-14.

46. Ibid, p.14.

47. The Labour Government administration backed the proposal but with the election of the Muldoon Government in 1975 the Rolleston Satellite town concept was out of favour in regional development terms.

high growth rates had been experienced in the past and been expected to continue by the planners of the early 1970's, later reports, such as the "Form and Direction Report" in late 1978 proposed a more flexible outlook to the development future. Four options for population growth, described simply as "zero", "Low", "medium" and "high" were suggested, with the medium rate thought of as most likely to occur in the near future.[48] This medium rate provided further flexibility in light of planning uncertainty in that either extreme ("high" or "zero") could be catered to without major planning changes. The medium range option itself indicated a turn of the century prediction for city population of only 360,000, vastly different from previous planning parameters.[49] This further suggested a population and land use pattern

> "...not unduly different from (that of) the present city."[50]

For the road network provisions this re-evaluation had again redefined the nature of the needed M.T.P. Ths move to long-term planning had essentially divided the urban transport issue into two parts: that concerning the needs of the internal area,[51] and that concerning the development of the wider region. The M.T.P. had been required to expand spatially. This in turn was achieved by programming network improvements to development needs. With Rolleston defined as the "Growth point" state highway 1 to the south of the main Christchurch urban area was to be upgraded (an extension of the southern motorway). With this immediate development to the south

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48. C.R.P.A. Planning Report No. 238 (July 1978).

49. M.T.P. Report No. 246 (November 1978) p.2. Earlier predictions (e.g. C.R.P.A. Planning Report No. 86 (October 1968) suggested a population of 400,000 by 1986, which translates into a city population of roughly half a million by the year 2000.

50. Ibid.

51. The city within the urban fence.

axed in the mid 1970's, the wider region transport emphasis shifted to catering for northern settlements and improvements to the routes to Rangiora and Kaiapoi. The reduction in the planning parameter largely negated the immediacy of these programmes. The spatial extent of the planning needs was again restricted. The M.T.P. was again confined to the original city.

Summary

Chapter 5 has sought to indicate how wider planning concerns - notably changing concepts of urban order - were incorporated into the Christchurch M.T.P.

Growth outward from the city centre and the associated development of radial transport links had resulted, at one and the same time in problems for transport and urban form. With much of the city's activity's concentrating on a central focus, the M.T.P. devised in the early 1960's reflected a single nucleii concept of urban order. As such, the major motorway links ran tangentially to the C.B.D., servicing the needs of traffic from the suburbs to the centre and vice versa.

Delays in application of this principle and predictions of continued high regional population growth forced a long-term change in urban order concepts. Whilst some immediate growth could be accommodated inside the existing 'urban fence' growth over and above this would have to involve the development of satellite centres. Transport policy was necessarily a major part of such proposals - acting as the links between the centres.

Meanwhile concern within the internal area was also building up whilst implementation of the M.T.P. was delayed traffic patterns changed. Suburban shopping and commercial centres developed attracting traffic away from the more crowded city centre. The

primary role of a dominant C.B.D. was being usurped. Both the transport plan and urban order concept had to adapt to this.

CHAPTER 6

CHAPTER 6

CONCLUSIONS

This thesis has attempted to describe and analyse the evolving nature of the urban transport planning process in Christchurch. At the outset, three broad objectives for this study were outlined: to describe the process of urban transport planning, to identify the relationship between transport planning and urban development, and finally to assess how these two features have changed through time, in the Christchurch example.

Chapter 1 introduced a model of the urban transport planning process which was to act as the study framework. This model presented urban transport planning, as an interactive circuit. 'Planning' was undertaken in the government domain, whilst the effects of plan decisions were felt in the community at large. This chapter ended with an introduction to the methodology of master transportation planning - the approach to urban transport planning adopted in Christchurch.

Chapter 2 went on to examine the evolution of the urban transport 'problem' in the Christchurch case. It was shown that a physical problem did not indeed exist at the time planning concern arose. Instead a problem was perceived to be developing and had yet to manifest itself in the form of severe traffic delays. The planning process was therefore concerned principally with future demands. The Master Transport Plan in this sense marked a concerted attempt by local and regional authorities to pre-plan transport requirements - the aim was more problem avoidance than solution.

The aim of this process, which was initiated in the mid 1950's, was to produce the 'best' possible plan and so avoid traffic congestion.

The city was seen to be facing an imminent crisis of congestion if car usage trends continued at their existing rates. The rise of the car and inability of the existing network to cope with possible future demands was therefore perceived as the 'problem' - not transport as such. Confirmation of these trends had yet to be obtained and this became one of the main tasks of the transport survey and forecasts. Information on the existing situation could be projected forward to a planning horizon and so derive a picture of the possible problem. In attempting this, however, a number of traffic trend "assumptions" were made. Most importantly, it was assumed the number of trips per vehicle during the plan-period would be the same as that experienced in the 1959 survey, and that the pattern of traffic movement would not change to any great extent. What such assumptions effectively meant was that the planners were inadvertently projecting their values and standards into the future - as the basis of their solution formulation considerations. They were planning so that the future reflected their present - that the transport experience of 1980 be no different from that of the late 1950's. The result was that these assumptions constrained planning by directing its course to car-based solutions.

Indeed perception of the problem had always been couched in terms of vehicle movement. The N.R.B. had initiated the metropolitan wide transport study in Christchurch by recommending, specifically, large-scale motorway planning. This perception of a means to 'solution' was perpetuated by the planners' continual reference to overseas examples during the course of their decision-making. The contemporary trend in urban transport was to motorway construction and Christchurch simply reflected this.

The methodology of master transportation planning acted to serve these perceptions. The aim was for a one-off, complete solution in a single plan; 'integration' was the key. The eventual product of the

planning process was to "be" integrated "both" modally (all forms of urban transport were to be considered) and spatially (by viewing the network as a whole). Whilst the assumptions on transport trends constrained modal considerations, the holistic view of the network constrained the spatial scale of solutions considered. Road widening and other 'piecemeal adjustments' were out of favour; new large-scale motorway facilities were seen as the best option.

The element of 'perception of the decision field' therefore played an important part in the planning process. An apparently clear perception of what the 'problem' was, and the best means to 'solve' it, existed even before the process of planning was initiated. This served to constrain choice. The plan solution outlined in Chapter 3, was produced after a series of decisions which effectively reduced the range of practical options to a minimum. This phase in the urban transport planning process was critical in that the 'rationality' of the M.T.P. method was 'bounded' at the outset by these perceptions.

Chapter 3 went on further by beginning to outline the nature of the public response to the proposed plan solution and the inherent value judgements on which it was based. The Master Transport Plan was presented as an all-or-nothing proposal - it was a complete blueprint for the 1980 transport situation. The alternative plan put forward by the C.P.S.G. in reaction against the M.T.P. was based on a different set of planning values - offering therefore a complete alternative.

The question of different planning concepts producing different results which could be considered 'best' solutions in terms of particular sets of values was examined in Chapter 4. This chapter assessed the effect that changes in the environment of planning in Christchurch had on the Outline M.T.P.

Uncertainty is an inherent aspect of planning. Indeed, the role of planning may be described as attempting to reduce this

uncertainty. The first major change to affect the Christchurch M.T.P. came with the advent of Buchananism, soon after the Plan itself was published. The Buchanan change in urban transport planning - from top-down to bottom-up planning - came at a time when the C.R.P.A. was being forced to justify M.T.P. decisions, and its planning method. 'Integration' in yet another respect, that of a complete town or 'regional' plan, now became a planning requirement, and this was a change which the C.R.P.A. itself found necessary to implement (through policy planning).

Changes in a number of other elements in the planning environment in the late 'sixties - notably the ability and willingness of local councils to implement M.T.P. proposals and changes in transport trends - also meant the Plan appeared outdated. It was here that the process of review - the Second Transport Study - became all important. As a result of this study it was found necessary to adapt various features of the original Plan, to meet a new set of circumstances which were confronting local urban transport planning as it went into the 1970's. The Second Study marked the realisation that the values and standards of the 1950's had become inapplicable to the 1970's and 1980's. As a result, the 'review' reduced the scale of the plan, changing its emphasis from central city to suburban needs. The plan process had adjusted its proposals such that the Plan itself became more flexible. Blueprint planning based on implementation by set dates was replaced by planning in separate development periods. Decision-making had assumed a more incremental nature.

The fifth chapter continued with the theme of change, this time addressing more specifically the transport/urban development relationship. Previous chapters had outlined how the M.T.P. had concentrated originally on the needs of the central city. This, it was argued, was the result of the predicted pattern of future trip making - congestion was to be a

problem primarily affecting the central city and radial routes leading to it. Chapter 5, however, introduced another possible explanation of why the Plan concentrated attention on the C.B.D. The regional authority planners had attempted to integrate their Plan with a recognisable concept of urban order. This conception was of the 'traditional city', dominated by one centre of activity - the C.B.D. The M.T.P. had attempted to maintain this traditional urban form in the face of forces of dispersal - the car itself and suburban sprawl.

The late 1960's and the 1970's saw a re-evaluation of the concept of urban order. Not only were the suburbs becoming more important in a transport planning sense, but this importance was itself inspired by a decline of the role of the central city as Christchurch's commercial and retail core. The city had, during the 1960's, begun to take on somewhat of a new form. Suburban shopping centres were seemingly the reflection of a multi-nucleated form. About the same time, planning for longer-term urban expansion was seen as becoming necessary. Satellite centres to absorb excess urban growth were suggested and directing this growth through M.T.P. transport links became part of regional policy. Later, by the mid 1970's when population growth rates had subsided, such satellite towns became a more distant proposition, however, their value from a long-term, indicative viewpoint, remained.

How then, in the light of these results, has the Friend and Jessop process model stood up to the examination from the Christchurch example? The model organized the planning process into three clear areas of interest: perception of decision field, formulation and comparison of possible actions and the eventual selection of an action. In this case, perception of the decision field was shown to be the most important element in selection of the type of response, whilst the separation of decision-making into three distinct components has been shown to be less clear-cut than the model suggests. The Christchurch situation

indicated that the task of formulation and comparison of alternative courses of action (and possibly even that of determining the final choice) were undertaken before even the problem itself had been clarified. This feature was most clearly illustrated by the adoption of new motorway construction and the alignment of these motorways. That they reflected closely the Suggate proposal of 1957 (tabled before the surveys were carried out), suggests that the planning process may have been less-well-defined than the model suggests.

The other major point of difference between model and Christchurch reality is visible in respect of the element of change in the planning environment. The model suggests change is incorporated in the iterative nature of the process. Whilst this may account for some changes within the plan product itself, the causes of this change often derive from other forces, outside the limited realm of transport planning (e.g. the economy, politics, fashion). This dynamism in the planning environment pervades every aspect of the planning process (see Figure 6.1). While urban transport planning continues a number of 'externalities' may alter. As a result, the reason for planning or the ability to implement plan decisions may be affected.

Finally, it has been shown through the course of this study that a rational, master planning methodology could not be applied in the Christchurch case. The attempted 'rationality' was itself based instead on subjective decision-making. Master transport planning itself became transformed by a variety of forces into a more incremental form of decision-making. Long-term blueprint planning is an almost impossible goal in Christchurch.

The value of such large-scale, long-term plans however, lay in their indicative role. Master plans should act as an overall guide. Incremental planning should direct the actual course of implementation.

This thesis has examined the urban transport planning process

from a single perspective: the experience of Christchurch. To provide a more accurate assessment - to either confirm the results of this study or, conversely, to show it as an exception which proves another rule - further studies of urban transport planning experiences within New Zealand and indeed worldwide should be undertaken.

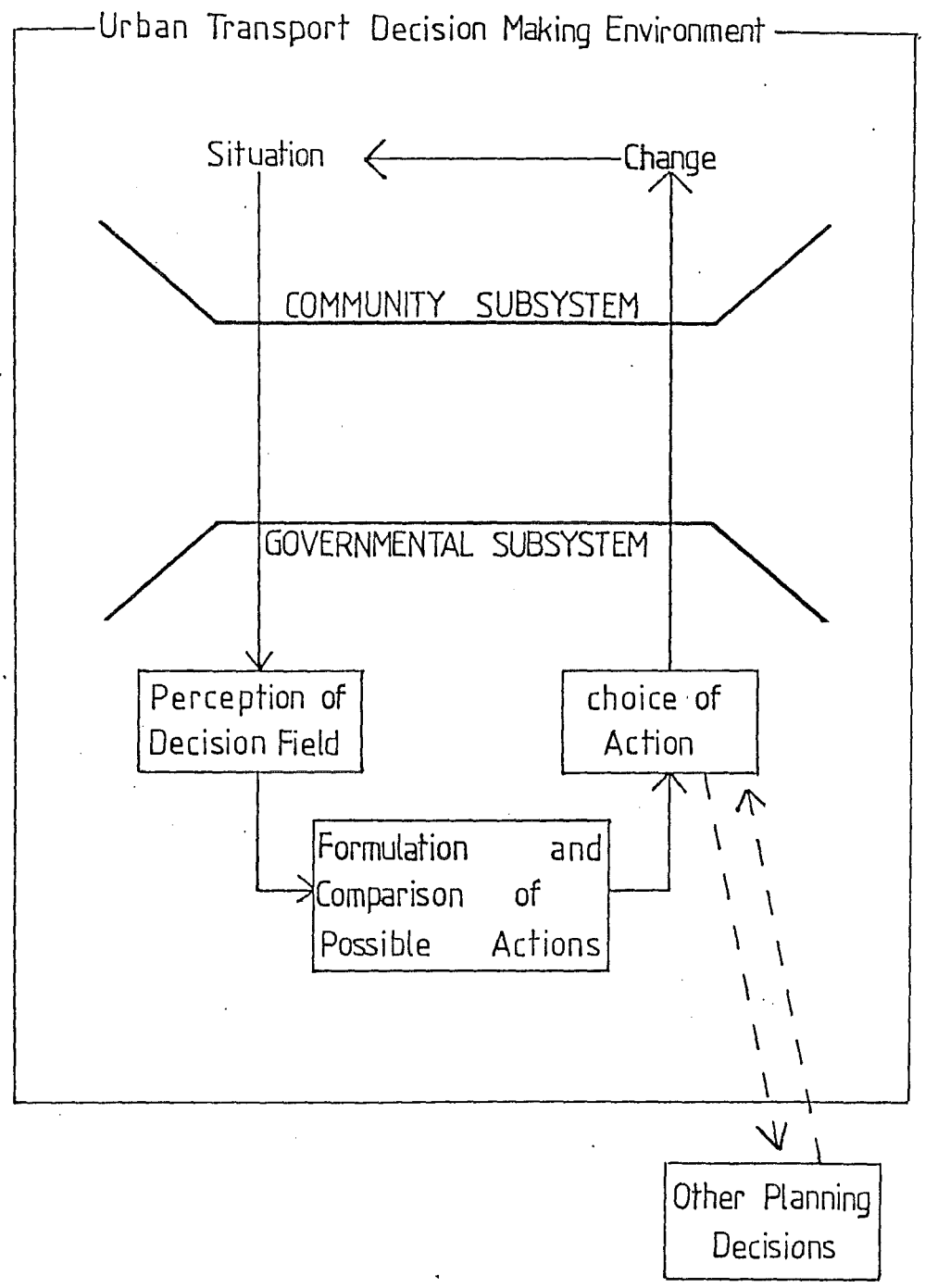

Figure 6.1 The Revised Urban Transport Planning Process

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